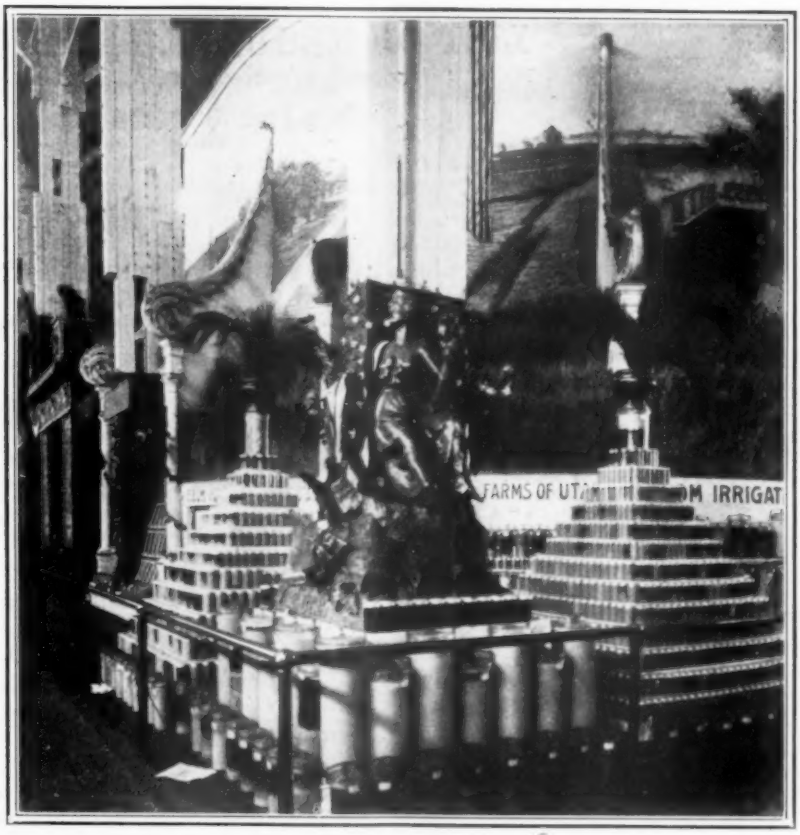
American Bee Journal

MASSACHUSETTS AGRICULTURAL COLLEGE.

WEEKLY—$1.00 A YEAR.
Published by GEORGE W. YORK & CO., 334 Dearborn Street.

45th Year. CHICAGO, ILL., MARCH 16, 1905. No. 11.

WEEKLY



UTAH APIARIAN EXHIBIT AT ST. LOUIS, IN 1904.
(See page 198.)

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

334 Dearborn Street, Chicago, Ill.

IMPORTANT NOTICES.

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States, Canada, and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec04" on your label shows that it is paid to the end of December, 1904.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your wrapper-label, which shows that the money has been received and credited.

ADVERTISING RATES will be given upon application.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.
2d.—To protect and defend its members in their lawful rights.
3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

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G. B. Lewis Co's B-WARE, Dadant's Foundation.

We can serve you quick and save you freight and express charges. Send us your BEESWAX in exchange for other goods. Send for our Catalog.

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With tears of sweetest joy,
That nothing can alloy,
I arise to say that
(Excuse this shabby hat)

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Has worked so very hard
That he has got a "pard"
To help him with his bees,
And if you wish to please

yourself and us, send for a circular giving particulars regarding our fine **ITALIAN QUEENS.**

Prices for Queens this season will be as follows:

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Untested	$1.00	$2.25
Tested	1.25	3.00
Select Tested	1.50	4.00
Select Tested (1904 rearing)	2.50	....
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Prices quoted by the dozen or hundred.

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Hardy varieties; yield big crops. Grafted Apple, 4½c; Budded Peach, 3½c; Black Locust Seedlings, $1 per 1000; Concord Grapes, $2 per 100. We pay the freight. Catalog, English or German, free.

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We have decided to offer **TEN SPECIAL CASH PRIZES** in addition to the regular premiums, for getting **new** subscriptions to the Weekly American Bee Journal. The 1st Prize will be $10; the 2d, $9; 3d, $8; 4th, $7; 5th, $6; 6th, $5; 7th, $4; 8th, $3; 9th, $2; and 10th, $1.00.

Read the Following Conditions Very Carefully:

1. This Special Cash Prize Contest will begin on the morning of March 20, and close the evening of July 1.

2. All who compete for the Cash Prizes must have their own subscription to the American Bee Journal paid at least to the end of this year (1905). And each one competing for a Cash Prize must have Five (5) new subscriptions to his or her credit before entering the contest for Cash Prizes. That is, those who have sent in 1, 2, 3 or 4 new subscriptions will not be counted as contestants for the Special Cash Prizes. You must have **5** to your credit, but need not send in the 5 all at one time.

3. **New** subscribers are considered as those who have not taken the American Bee Journal regularly since 1903. That is, any one who is not getting it now, but received it during 1904, would not be considered a **new** subscriber now.

4. A new subscriber must not be a member of the same family where the Bee Journal is being taken now. A new subscriber must be in fact a new reader.

5. Cash must accompany every order when sending in new subscriptions. And after any regular subscriber has sent in 5 new ones, he will say when sending in the sixth new one that he wishes to compete for a Cash Prize. Then we will enter his name on the Contestants' List. (If all is not now plain, please ask any questions and we will try to clear up anything that is not understood).

LIST OF REGULAR PREMIUMS GIVEN

(whether you compete on the Special Cash Prizes or not).

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- Untested Italian Queen (in May or June).
- Doolittle's "Scientific Queen-Rearing" (bound in Leatherette).
- Hutchinson's "Advanced Bee-Culture".
- Newman's "Bees and Honey" (in paper).
- Howard's book on "Foul Brood".
- Pierce's "Winter Problem in Bee-Keeping".
- Monette "Queen-Clipping Device".

Given Free for 2 NEW Subscriptions.

YOUR CHOICE.

- Dr. Miller's "40 Years Among the Bees".
- Doolittle's "Scientific Queen-Rearing" (bound in cloth).
- Newman's "Bees and Honey", (in cloth).
- "Americanische Bienenzucht."
- Stylographic Pen.

Given Free for 3 NEW Subscriptions.

YOUR CHOICE.

- Prof. Cook's "Bee-Keeper's Guide; or, Manual of the Apiary."
- Dadant's "Langstroth on the Honey-Bee".
- Root's "A B C of Bee-Culture".
- Your own Subscription to the American Bee Journal for one year.
- A Novelty Pocket-Knife (with your name and address on one side of handle, and 3 bees on the other side).
- A Fountain Pen.
- 100 copies "Honey as a Health Food".

☞ Remember, that in each case above it is **your choice of any one** of the premiums offered. And when you have sent in 5 new yearly subscriptions, after March 20, you can **then** compete on the Special Cash Prizes. The one who sends in the most **new** subscriptions over 5, between March 20 and July 1, 1905, will receive $10 cash **in addition** to whatever of the regular premiums he may have received for sending new subscriptions from time to time between March 20 and July 1. The one sending in the second largest number over 5, will get $9 cash, and so on.

Now—let every one of our regular subscribers whose subscriptions are paid to the end of 1905 or beyond, get to work and pour in the new subscriptions. If your own subscription is not yet paid to the end of 1905, send it in at once, or when you send your first new subscription.

We will be pleased to furnish all the copies of the American Bee Journal free that you may want to use as samples. Just let us know how many you want.

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MEANS
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110,000 Pounds Used by Bee-Keepers in 1904.

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BEESWAX WANTED at all times.
Send for our 1905 Catalog.

Dadant & Sons
HAMILTON, ILL.

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For a limited time we offer No.25 Honey-Jars, porcelain cover, metal screw cap, holding one pound of honey net, one gross in case complete, in 5-gross lots, $4.00 per gross; less quantities, $4.50 per gross, f.o.b. New York. If you want to secure some, let us know at once.

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We represent the American Can Co. in Texas as their sole and exclusive agents for Honey-Cans. We also handle Dadant & Sons' world-famous Comb Foundation exclusively. Get our prices before buying.

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Successor to THE GRAHAM HYDE BEE CO.
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10A3t FAIRMONT, MINN.

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SEND TO THE
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LIBERAL DISCOUNTS on all orders till Jan. 1, 1905. 1A13t

Headquarters for

LEWIS' GOODS IN CHICAGO.

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H. M. ARND, Manager.

Having decided to add Bee-Keepers' Supplies to our honey-business, we have arranged with the well-known **G. B. LEWIS CO.** to handle their full line of **Popular Beeware** in Chicago. We will sell at their regular prices.

Catalog and prices on Honey on application. If you want **Good Goods at Factory Prices and Prompt Shipment,** send your orders to the

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☞ Beeswax taken in exchange for Bee-Supplies, or for Cash.

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Or Prospective Bee-Keeper

should read GLEANINGS IN BEE CULTURE. It gives you the latest in the apicultural world. If you have honey and wax for sale it tells you the market prices. If you have troublesome questions to solve, it helps you. The very best bee-keepers write for it. The following noted writers contribute regularly:

C. C. MILLER,
Of Illinois.

G. M. DOOLITTLE,
Of New York.

J. A. GREEN,
Of Colorado.

LOUIS SCHOLL,
Of Texas.

PROF. A. J. COOK,
Of California.

Semi-monthly. Over a thousand pages annually. Illustrated fully with the finest half-tones, printed on the best paper. It has the largest circulation of any bee-paper in the world. $1.00 a year. Sample copy free.

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We are certain that any one interested in bees would be greatly benefited by becoming a subscriber to GLEANINGS IN BEE CULTURE. We want you to give it a trial. After you have received a few numbers we are sure you will become a permanent subscriber. We therefore make a special trial offer of 6 months for 25c. Fill in your name in space below, remit 25 cents, and the paper will begin at once.

Enclosed find 25 cents, for which send me Gleanings in Bee Culture 6 months.

NAME .....

P. O. .....

COUNTY .....

STATE .....

Root's Goods in Chicago.

For the saving of freight for our western trade, as well as to give much quicker delivery, we opened a branch office in Chicago, Oct. 1, 1903. The following taken from our catalog of last year, explains the transfer then made:

The business for many years conducted by George W. York & Co., at 144 E. Erie Street, as agent for The A. I. Root Company's supplies, is this day transferred to The A. I. Root Company, to be conducted as a branch office. Please note change of name to avoid confusion in our work. THE A. I. ROOT CO.
October 1, 1903.

To Our Customers and Friends:

In transferring back to The A. I. Root Company the bee-supply business, which we took over from them some years ago, we do so with regret, as we have labored hard to build up a large and honorable trade in bee-appliances, and value beyond expression the valuable patronage accorded us during the years. We trust the same will be continued to our successors in the business.
GEORGE W. YORK & CO.
Chicago, Ill., Oct. 1, 1903.

The conveniences offered by the branch office were evidently appreciated by the bee-keepers of Illinois, Wisconsin, and other States beyond, for the business done by the branch was much beyond our expectations. During the rush season—April, May and Jnne—orders came in so fast that, in spite of frequent orders to the factory for another car of goods, the stock ran low, and some delays and annoyances thereby were caused. Some little confusion because of change of name and manner of conducting the business (from agency to branch office), but these have all been overcome. We are better than ever prepared to handle your business carefully and promptly, and solicit your patronage.

Low Freight and Quick Delivery.

A glance at any railroad map will show the superiority of Chicago as a shipping-point. Because of the great number of railroad and steamboat lines centering in Chicago, and the large stock of goods we carry, we can give you the best of service. This office is in constant touch with the factory and home office, and in many cases can give your order quicker attention and earlier shipment than the factory, to say nothing about the saving in time and transit and lower transportation charges.

Wholesale and Retail.

We are prepared to furnish goods at wholesale and retail, the same as the home office.

Terms.

Our terms are cash with the order. We pay cash for material, and pay our helpers cash every week for their work; therefore we must have cash in advance for the goods furnished. Do not ask for credit.

Beeswax Wanted.

We are in the market for good beeswax the entire year, and pay the same prices as quoted by our home office in each issue of GLEANINGS IN BEE CULTURE. Send your wax direct to us for cash or in exchange for supplies.

Extracted Honey.

In the course of a year we use large quantities of extracted honey, and are pleased to get sample and prices from parties who have honey to exchange for supplies. We are also prepared at all times to furnish first-class honey to any one who is in need of same, either bee-keepers who have a demand for more than they can furnish, or from dealers. Get our prices before you place your orders elsewhere.

DANZENBAKER HIVE.

"Facts About Bees", a 64-page book written by Mr. F. Danzenbaker, giving a complete description of his famous hive and directions for using. Full of valuable information. Sent on receipt of a 2-cent stamp to pay the postage. **Send for it.**

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Three Points of Excellence:

QUALITY
You can produce better-looking honey.

QUANTITY
You can produce more of it.

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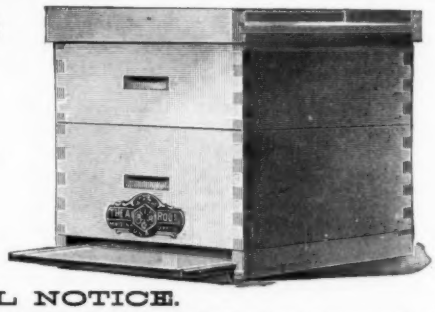
You can get more per pound for it.



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Address all Orders, Remittances, Inquiries, etc., to

THE A. I. ROOT CO., 144 East Erie Street, Chicago, Ill.

ESTABLISHT IN 1861

AMERICAN BEE JOURNAL

THE OLDEST BEE-PAPER IN AMERICA

Entered at the Post-Office at Chicago as Second-Class Mail-Matter.

Published Weekly at $1.00 a Year by George W. York & Co., 334 Dearborn St.

GEORGE W. YORK, Editor. CHICAGO, ILL., MARCH 16, 1905. Vol. XLV.—No. 11.

Editorial Notes and Comments

The Third Double Number So Far This Year.

Yes, this is the third double number of the American Bee Journal for this year, making 48 extra pages already, and it is only the middle of March. That is almost one-seventeenth more pages than we agree to furnish during the year for one dollar, for the regular issue is 16 pages weekly. But we are glad we can publish these occasional double numbers, for we believe they are appreciated very much by our readers.

Midwinter Flights of Bees.

Strictly speaking, when midwinter flights are spoken of in connection with cellar-wintered bees, midwinter is not really meant, but February or early March. C. Davenport, in Gleanings in Bee-Culture, mentions what may help to account for ill effects of these flights in some cases. He says the bees should be returned to the cellar on the evening of the same day after their being taken out, or, at most, not later than the next day. Left out longer they are likely to start breeding. So the ill effects of midwinter flights *may* have come from leaving out too long.

The Contents of the Brood-Chamber.

In order to judge properly whether all is as it should be inside a hive, the beginner should have some idea what to expect when he opens it. Upon this point the books are to a large extent silent, leaving him to gain the desired knowledge through a series of observations extending through one or more years. Indeed, after many years of observations it may not be the easiest thing for him to give anything like a definite answer in a few words to the question, "What ought I to find upon opening a hive?" In no two hives will exactly the same thing be found. What is found to-day will be different from what was found in the same hive at the last inspection. But at least an attempt may be made to enlighten the inquiring neophyte in a sort of general way as to what he may expect to find in a bee-hive.

If the bees have been left to their own devices, there will be found drone-comb in different places, amounting to the half or the whole of a full frame. If the bee-keeper has controlled, there may be nothing but worker-comb in the hive, or, at most, two or three square inches of drone-comb in one of the outer frames. Drone-cells are not likely to contain brood except in times of prosperity when honey is coming in. At other times they may contain honey, but not pollen.

The queen in a colony wintered outdoors is likely to begin laying a few eggs in February—sometimes even in January. If a colony is cellared, it is not likely to have brood started much, if at all, before being brought out of cellar. The queen begins with a very few eggs daily, a compact cluster being in the center, or warmest part of the hive. By and by eggs and brood will be found in two or three frames, the whole being no more than would easily go in one frame, which means that the queen may be laying at the rate of about 300 eggs a day. When she gets to laying 1000 a day, she will have four frames fairly well filled with brood—at least they would be called well filled, although little more than three-fourths of their actual capacity. With 1500 a day—many queens will not go beyond this, while some will more than double it—she will have six Langstroth frames well occupied, and this a fairly good queen will reach by the last of May in the North.

Looking into the hive at this time, there will be found a brood-nest of a somewhat globular form, the central frames being a little fuller than the others, a band of honey being at the top and at the two ends, although a good queen may have brood clear to the top-bar. There may and there may not be some pollen in the upper part of these frames, but the frame next them at each side will have a good supply of pollen as well as honey. In a 10-frame hive it is not a very common thing to find brood in the outside frame at each side, but in an 8-frame hive the queen will often insist upon occupying a good part of the two outside frames.

This amount of brood will be found kept up pretty well throughout the season, but toward the close the sphere of brood will gradually become less and less, the space left vacant by the brood being filled with honey and pollen, and somewhere in September or October all brood-rearing ceases, and all the combs should be found filled with honey and pollen except the lower portions of the central combs.

Thus a rough sketch is given as to what may be found in a hive at different times, subject to innumerable variations, and no one must understand that any attempt at exactness has been attempted. Dates must be changed for the South. Neither must any beginner understand that 8 or even 10 frames make the limit for every queen. If given the opportunity, there are queens which will occupy 12, 14, or more frames.

The National Association and Incorporation.

Dr. C. C. Miller has this to say on the subject of incorporation of the National Bee-Keepers' Association:

I am glad, Mr. Editor, to see the matter of incorporation of the National discussed in your columns. I don't know all about such things, but so far as I can judge from what is said on page 115, the weight of argument is on the side of incorporation. After incorporation we would not be obliged to engage in a lawsuit any more than we are now. In the case mentioned, the Ladies' Home Journal, I think there was no lawsuit on the part of the incorporated concern; merely a request for retraction, the same as was made by the National. Prompt and satisfactory apology was made in the case of the incorporated concern *because it was incorporated*, and it was not made in the other case *because it was not incorporated*. If we had received the same treatment as the incorporated concern, would not this one case have paid for the cost of incorporation several times over?

Again I repeat that incorporation does not oblige us to engage in lawsuits. Yet I can not believe it would be so very hard to prove that individual members of the National were damaged a fixed amount by some of the things that have been done.

The National, in one of its former states of existence, was incorporated. If it did no good it certainly did no harm. Would it do any more harm now? C. C. MILLER.

We think the principal question to be decided before incorporating the National is this: Will the Association take any advantage of the added power and responsibility? If not, why not remain as it is?

There is a committee on incorporation that will report at the next annual meeting of the National. No doubt they wish to get the views of the members. Dr. Miller is on that committee, we believe.

A Bee-Keepers' Paradise.

The paradises for bee-keepers that we sometimes read about and sigh for will probably turn out generally, upon close acquaintance, to be no more paradisaical, all things considered, than the places we are already occupying. Arthur Laing, in Canadian Bee Journal, besides the mention of scorpions, centipedes, frogs, land crabs and fleas, which one of the paradises enjoys, has this to say:

Jamaica has been described as a "bee-keepers' paradise", but I am becoming more and more satisfied every day that we have in Canada a better chance for success as bee-keepers than we would have in Jamaica. I do not believe that the annual average yield would be over 100 pounds per colony; in fact, was told to-day by a gentleman who has 400 colonies of bees, that his best average in any year had been 84 pounds per colony, and last year, after the hurricane, he averaged only 42 pounds, and this honey, mind you, will not bring more than from 2½ to 3 cents per pound above the cost of package, and out of this the expenses of the apiary must be paid, so that the apiarist here must keep at least three times as many bees as our Canadian apiarist in order to make the same money. Then just think of three times the number of hives, barrels, extractors, honey-knives, smokers, etc., that have to be bought, and the extra help that must be paid for. Lumber for hives costs from $50 to $60 per 1000 feet.

Money can undoubtedly be made here by bee-keeping, but, in all sincerity, I say again, we Canadian bee-keepers have a better opportunity in Canada than we would have in Jamaica.

Honey Definitions by the Government.

Circular No. 13, by the United States Secretary of Agriculture, entitled "Standards of Purity for Food Products", has been received. Especially interesting to bee-keepers are the following definitions that may be considered authoritative, though not beyond the possibility of modification in the future:

1. *Honey* is the nectar and saccharine exudations of plants gathered, modified, and stored in the comb by honey-bees (*Apis mellifica*). It is lævo-rotatory, contains not more than twenty-five (25) percent of water, not more than twenty-five hundredths (0.25) percent of ash, and not more than eight (8) percent of sucrose.
2. *Comb honey* is honey contained in the cells of comb.
3. *Extracted honey* is honey which has been separated from the uncrushed comb by centrifugal force or gravity.
4. *Strained honey* is honey removed from the crushed comb by straining or other means.

It is perhaps a matter of regret that in the list of vinegars, honey-vinegar is not included.

Shaken Swarms in 1865 and 1880.

On page 19 we called attention to the fact that Mr. Geo. W. House, of New York State, described his method of shaken swarms in 1880, in the Bee-Keepers' Magazine, published at that time. Mr. Geo. M. Sowarby, of the same State, now requests us to republish Mr. House's method, which request we comply with. It is as follows:

As soon as a swarm has made preparations for swarming by having eggs deposited in the queen-cells, we proceed as follows: Remove the old colony a few feet one side, and on the old location place a new hive (either empty or the frames filled with foundation), put a small block between the lower front edge of the hive and the bottom-board (to give the bees an easy access to the hive), and place a wide board in front of the new hive, with one edge resting against the bottom-board while the other edge rests upon the ground, so the bees may run up and into the hive.

We now open the old hive and draw a frame a little one side from the center of the hive, and after looking the comb carefully over to ascertain if the queen is thereon, we turn to the new hive, and, by a little sudden jerk, we shake nearly all the adhering bees on the board in front, and they readily enter their new house.

Setting this frame in the shade of a near hive (that we may have easy access to the frames to work), we return to the old hive, and draw the next frame towards the center, looking for the queen and shaking the bees in front of the new hive, as we did with the preceding frame. Replace this frame in its original place, and proceed as with the preceding frame, until you have two-thirds of the bees from the old colony into the new hive. As soon as you find the queen, take her from the comb and place her at the entrance of the new hive and let her run in with the bees. Now close the old hive and contract the entrance, and remove it to a new location.

By this time you may remove the wide board in front of new hive, so that the old location will not be disfigured, and the working bees will lose no time in entering the new hive.

The next day give the old swarm a queen-cell that will hatch within 48 hours, and the work is done.

A laying queen may be introduced instead of a cell if desired. The first few swarms will furnish us with queen-cells of the most perfect type. But we generally make a few swarms about ten days before we wish to use the cells, and claim there is no difference in queens reared from larvæ from two to four days old and those reared by the queen depositing the egg in the cell. This is during the swarming season.

The day is not far distant when the apiarist that can manage the most bees, in the same length of time (all conditions equal), will be considered the most skillful and the most successful. In artificial swarming on the above plan, you will notice we secure our new swarms at least a week sooner than we would by allowing them to swarm naturally, and in the old hive we have a laying queen at least five days earlier than we would by allowing them to hatch their own queen—two very great items during the honey season. Swarms having extra qualities we allow to rear their own queen-cells, that we may use them in other hives, thus improving the qualities of our bees.

After a few days I claim there is no one that can discover the difference between such a swarm and one that swarms naturally. We have practiced this mode of swarming for the past 15 years, and are satisfied there is no plan that surpasses it, where you wish to have one new swarm for each old one. GEO. W. HOUSE.

Onondaga Co., N. Y., April 12, 1880.

Miscellaneous News Items

Mr. Eugene Secor so often becomes delightfully rhythmical that bee-keepers are seldom surprised at his poetic productions. They are always so good. Here is one of his latest:

Pussy Willows.

By the brook that skirts the pasture
Pussy willows scent the breeze
Long before the sleepy linden
Wakes to tempt the honey-bees.
April woods are bare and brown,
But the willows—pussy willows—
Shake their dainty, fluffy pillows,
Soft as beds of eider-down.

All the wealth of love and service
Are not lavished on the great.
In the scales of the Eternal
They are least who lag and wait.
Bare and brown the giant trees,
But the willows—pussy willows—
Early shake their golden pillows,
Serving hungry honey-bees.

Winnebago Co., Iowa. EUGENE SECOR.

On the Death of Geo. W. Brodbeck.—We have received the following resolutions, which were passed by the stockholders of the California National Honey-Producers' Association at their regular annual meeting, Feb. 15, 1905:

WHEREAS, it has pleased the Great Ruler of the universe to remove from our midst our esteemed president and brother bee-keeper, Geo. W. Brodbeck; therefore, be it

Resolved, That we sincerely mourn our loss, and will long cherish his name and remember his many kind deeds and persistent endeavors in behalf of ourselves and the bee-keepers at large. We hereby tender our sincere sympathy to the bereaved. May the softening influence of time remove the grief, and simply leave happy thoughts of his kindly life.

Resolved, That a copy of these resolutions be sent to Mrs. Brodbeck, and to the press for publication.

GEO. L. EMERSON,
T. O. ANDREWS, } *Committee.*
G. F. MERRIAM,

Not a "Fellow".—Mr. E. Brubaker, of Philadelphia Co., Pa., has sent us the following stanza, taken from a Philadelphia newspaper:

The roving bee is often called
A bold, bad robber fellow;
But for the sweets from honey-bloom,
He pays in gold-dust yellow.
—CORA LAPHAM HAZARD.

That's all right, except that the "roving bee" referred to is usually not a "fellow".

Utah and Other Apiarian Exhibits at St. Louis.—On the first page we present a picture of the Utah apiarian exhibit at the World's Fair held in St. Louis last year. Some weeks ago we presented a picture and brief description of the Colorado apiarian exhibit. Mr. E. S. Lovesy, of Utah, sends us the following concerning the Utah display:

We sent nearly 4 tons of alfalfa, sweet clover, and some white clover honey for the Utah exhibit at the World's Fair at St. Louis. It consisted of 300 pounds of comb honey and about 3¾ tons of extracted, collected from 12 counties and about 20 different localities of the State. There were about 2 tons of beautiful white alfalfa honey put up in large glass jars, some of them holding about 100 pounds each. This is too large a package to put on exhibition. Had the contents of one of those jars been put up in 1 or 2 pound jars it would have shown up clear and water-white. The light amber was put up in smaller jars, with the result that it looked whiter than the best white

in the large jars. But this light amber honey would have looked dark in those big jars.

Our object was to represent correctly the honey product of the State. Our honey will easily go 2 to 1 white, and if it had been reliquefied at the Fair, and put up in smaller jars, the effect would have been all that could have been desired. The only excuse we can offer is that those who managed the exhibit thought they were doing everything for the best, and the bee-keepers had nothing to do with the exhibit other than to collect the honey, fill the jars, and deliver it to the Fair commissioners. Moral: Don't exhibit honey in bulky packages. They are too heavy to handle, and don't show up well.

The unique wax-model, representing a maiden on the mountain-top holding aloft a horn of plenty, which was intended to represent the industries of the State—including its mining, agricultural, horticultural and apicultural industries; also the American flag, which, with the bee-hive, is the emblem of the State—was the creation of one of our local artists. E. S. LOVESY.

Salt Lake Co., Utah.

The British Bee Journal, in January last, contained quite a full report, prepared by Mr. Walter F. Reid, of the apiarian exhibits from various counties, as shown at the St. Louis Exposition. Mr. Reid reported the following:

In the Exhibition there were many exhibits of bee-products, some of them of considerable importance. Several foreign countries were represented, and some of the American States had special honey exhibits.

France had a very small exhibit, consisting of a few jars of excellent Narbonne honey and a defective "Gariel" hive.

Madagascar exhibited four cakes of beeswax of pronounced odor, three of which were of good color.

Reunion showed three bottles of honey of fairly good color, but indifferent flavor.

Germany did not exhibit any bee-products; but Prof. R. Klebs, of Konigsberg, showed a unique collection of insects in amber, some of which were mounted in a resinous mixture of the same coefficient of refraction as the amber, so that the specimens could be easily studied. Among the 68 exhibits were several apidæ. One was a new species of bombus, while another represented a hitherto undescribed apis much resembling our honey-bee, but slightly larger. Although the pollen-baskets appeared to be fully developed, yet the compound eyes met on the top of the head as in the drones of the present day, leaving a small triangular space on the forehead in which three single eyes were placed. The upper part of the thorax has a thorny appearance, and seemed devoid of hair. The collection included eight vespidæ, which, in their general structure, reminded one of South American forms.

Bulgaria showed three samples of candied honey of fairly good quality, and three cakes of wax.

Argentina had three exhibits of honey, one of which, apparently from alfalfa, was of good quality. One cake of wax was also exhibited.

Nicaraugua exhibited a cake of nearly black wild beeswax, and also some interesting specimens of vegetable wax, obtained from the berries of a shrub with leaves resembling those of the myrtle.

Mexico had a good exhibit of wax from several provinces. Some large cakes of bleached wax from Jalapa were of excellent quality, and there were good samples from Matamoras and Vera Cruz. Some of the native beeswax was of very dark color, resembling cakes of chocolate.

Cuba exhibited a few samples of indifferent honey, packed in wine and champaign bottles! Only one from Guantanamo would be considered of average quality in this country.

Philippines—The United States had a large collection of Philippine products, including about 25 specimens of wild beeswax of various degrees of purity, and a number of home-made wax-candles as used in the churches. The wax was said to be derived from two kinds of bees, one a large variety, probably Apis dorsata, and the other a small bee of about the size of a house-fly, and striped black and yellow, more resembling a wasp than a bee. The cells of the small combs were about ⅛ inch in diameter, and the native name of the bee was "Putyucan".

Japan's exhibit of honey was remarkable for careful and tasteful packing. Some jars—or, rather, stoppered bottles—from the Suwa apiary, Osaka, were specially neat. The hive-bee is said to have been introduced about 100 years ago from Spain; but wild bees existed previously in the Japanese forests.

Canada had a splendid trophy of honey, both extracted and in the comb. About 50 exhibitors had contributed towards this collective exhibit, which weighed about one ton.

Among the States of the Union, Colorado had a very fine exhibit of honey, chiefly collected by Senator G. W. Swink, who owns a number of apiaries. The quantity of honey shown was considerable, being about two tons of section and one ton of extracted honey. The whole of it was of good quality, and there was also some excellent beeswax.

Utah showed a collective exhibit of about 5000 pounds of excellent alfalfa, packed in large glass jars 4 feet high and 9 inches in diameter, with glass lids.

California would have made a better show had her exhibits not been split up into counties. San Diego County showed some good white sage honey, and Los Angeles some extra-large sections of good quality. More than 100 sections from Fresno contained good honey, but were badly finished, judging by our standard, and the same may be said of a number of sections from Sacramento. Perhaps the best exhibit of extracted honey was from Los Angeles County, packed in clamped jars.

Nebraska.—The custodian of this exhibit, Mr. Wm. James, is himself a bee-keeper, and gave some interesting information upon the bee-keeping industry in that State. The chief sources of honey are alfalfa, white clover and heartsease (*polygonum*). Langstroth 8-frame hives are chiefly used, and the yield of honey averages about 45 pounds per colony. A large number of samples of honey were shown, which had been collected and arranged by Mr. Stilson.

Arkansas was represented by only one jar containing comb and honey mixed, the flavor of which was good. There seems to be an opinion that the flavor of honey is improved by an admixture of comb.

Missouri had a large trophy of honey, badly staged, the sections being shown in the packing-cases. Some honey was exhibited in stoppered bottles, and was very deficient in flavor of any kind.

Kansas showed a few samples of alfalfa extracted honey of average quality.

Mississippi had both honey and wax exhibits. Some of the honey was from the *melilotus* [sweet clover], and of excellent quality. The *melilotus* was said to have been introduced before the alfalfa, which latter is now supplanting it. Six samples of wax appeared to be of good quality; but it is difficult to judge wax when the temperature is above 90 degrees Fahr.

Iowa staged about half a ton of section honey of average quality but no extracted honey. About 1 cwt. of good wax was also shown.

Louisiana had a small exhibit of ½-pound jars of honey marked "Goldenrod", "Morning-Glory", and "Willow", of which the last had the finest flavor.

Oregon was represented by a small quantity of inferior honey. It is said that the honey gathered near the coast is inferior in quality to that obtained further inland.

Idaho had a small exhibit of sections arranged in fancy design.

New Mexico showed about 100 sections and 50 pounds of extracted honey, chiefly alfalfa. The bulk of this honey was produced at a height of 3600 feet above sea-level. The chief apiarist owns about 1000 colonies. When he arrived at the place where his bees are now located his whole belongings consisted of two wagon-loads of hives and a tent, and he is now a prosperous colonist.

There were very few bee-appliances exhibited at St. Louis. The A. I. Root Co. had an exhibit of well-made goods familiar to bee-keepers, but which contained nothing new except a novelty in form of a smoker without a nozzle.

There were three colonies of bees in the Horticultural Building, of which two were of the Italian variety. It was remarkable that while the humming-birds drove away both butterflies and native bees from the beds of flowers in the exhibition grounds, they took no notice of the hive-bees. Up to the middle of October the bees were still bringing in honey from numerous wild flowers, especially goldenrod and aster—a small Michaelmas daisy. WALTER F. REID.

Baiting Fish with Honey.—Honeyed words have often lured foolish members of the human family to their ruin, but we have never known a member of the fish family to be lured by a honeyed hook, though good Isaak Walton is authority for the catching of tench with "a bait made of a paste of honey and brown bread".

The office boy has tried to improve the above sentiment in this "poetical" fashion:

Brown bread and jelly-cake
Makes a fellow's belly ache;
Brown bread and honey-paste
Just suits a fish's taste.

The last line is "bum", but it is excusable, as the "boy" is not yet a full-fledged poet—his hair is yet clipped quite short—for obvious reasons.

Doolittle & Clark is the way it reads now, instead of simply "G. M. Doolittle". The strenuous life that Mr. Doolittle has been leading for so many years has compelled him to share the labor as well as the pleasure of his business, and so he has associated with him Mr. P. G. Clark, who is a practical apiarist. They will hold forth at "the old stand" where Mr. Doolittle has lived for over 30 years—at Borodino, N. Y. See their advertisement on another page.

The Pacific Rural Press has been designated by the State Grange Executive Committee as the official organ of the State Grange of California.

Honey as a Health-Food.—This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food", written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey". It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey the more honey they will buy.

PRICES, prepaid—Sample copy for a two-cent stamp; 50 copies for 70 cts.; 100 for $1.25: 250 for $2.25; 500 for $4.00; or 1000 for $7.50. Your business card printed *free* at the bottom of the front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

See Langstroth Book Offer on another page of this copy of the American Bee Journal.

Opinions of Some Experts

Should the National be Incorporated?

Ques. 23—*Do you think it desirable that the National Bee-Keepers' Association should be incorporated?*

JAS. A. STONE (Ill.)—Yes.

J. A. GREEN (Colo.)—Yes.

WM. MCEVOY (Ont.)—Yes.

O. O. POPPLETON (Fla.)—Yes.

G. M. DOOLITTLE (N. Y.)—No.

S. T. PETTIT (Ont.)—I do not know.

N. E. FRANCE (Wis.)—Not at present.

C. DAVENPORT (Minn.)—I do not know.

EUGENE SECOR (Iowa)—I doubt if it will pay.

REV. M. MAHIN (Ind.)—It seems to me desirable.

MORGAN BROS. (S. Dak.)—Yes, all things considered.

DR. C. C. MILLER (Ill.)—With my present light, yes.

E. S. LOVESY (Utah)—I think it would be desirable if it should be incorporated.

P. H. ELWOOD (N. Y.)—I am not informed as to advantages and disadvantages.

E. E. HASTY (Ohio)—Quite open to conviction on this point, but rather think not.

PROF. A. J. COOK (Calif.)—I see no harm, and I can see great possible advantages.

E. D. TOWNSEND (Mich.)—There is work ahead for the National to do, so it will be necessary to incorporate.

E. WHITCOMB (Nebr.)—Incorporation is of no advantage unless we desire to acquire property; to sue and be sued.

R. C. AIKIN (Colo.)—Yes, if we want legal standing. But I am not a lawyer, nor have I thought much on the subject.

C. P. DADANT (Ill.)—It can do no harm, and will give more authority to the officers, the General Manager especially.

DR. J. P. H. BROWN (Ga.)—If the Association has any property, or intends to do a business, it would be better to have it incorporated.

R. L. TAYLOR (Mich.)—Yes. Without incorporation it can neither sue nor be sued. Pleading the "baby act", as it is called, is not looked upon with favor.

ADRIAN GETAZ (Tenn.)—Yes. It would enable the Association to carry legal business in its own name, and under its own responsibility. In a word, using legal terms, it could sue and be sued.

G. W. DEMAREE (Ky.)—I do not think so. The good work that has been accomplished by the bee-keepers' societies all over the country is the result of unselfish commingling with the people of all rural pursuits.

L. STACHELHAUSEN (Tex.)—I do not see how the Association could be incorporated except a capital for some business purpose is raised and the members become share-holders. As the Association does no business of this kind as yet, I do not see a possibility or a purpose for incorporation.

C. H. DIBBERN (Ill.)—This is a legal question rather than an apicultural one. Yes, I think it should be incorporated, to give it legal standing in court. Necessarily, to carry out the intentions and purposes of the Association, many legal questions will come up for solution, and the Association is constantly at a disadvantage without incorporation.

A Queen-Bee Free as a Premium.—We are now booking orders for untested Italian queens to be delivered in May or June. This is the premium offer: To a subscriber whose own subscription to the American Bee Journal is paid at least to the end of 1905, we will give an untested Italian queen for sending us one new subscription with $1.00 for the Bee Journal a year. Now is a good time to get new subscribers. If you wish extra copies of the Bee Journal for use as samples, let us know how many you want and we will mail them to you. Address all orders to the office of the American Bee Journal.

Mr. Hasty's Afterthoughts

The "Old Reliable" seen through New and Unreliable Glasses.
By E. E. HASTY, Sta. B Rural, Toledo, Ohio.

HYBRID BEES AND FAIR PREMIUMS.

And so hybrid bees have an unbroken record of 20 years—taking every first premium for comb honey at the Nebraska State Fair for that time. Noteworthy. I'll venture to guess that this fact does not mean exactly what it seems to mean at first view. I infer that very little honey stored by pure blacks ever comes in—pure blacks so very scarce—thus making it a race between Italians and hybrids. As to the hybrids, presumably one type of them finishes up its honey much as Italians do; while another type of them does it so nearly the same as black bees do that one could scarce tell the difference. The prize-winners belong to the latter type, I take it. Page 61.

SYRIAN BEES AND QUEEN RECORD.

And the Syrian bees (as vised by Prof. Benton) seem to hold the record for manipulation of queens. He doesn't appear to say whether they were all at liberty at once, or only part of them, but there were 250, and at least a great part of them at liberty at once. Suspicious. Suspicious because it seems to be a going back to a state of things existing before the bee had attained its present high and peculiar state of development. A colony of bees which inclines to build very few queen-cells—and in which two virgins are pretty sure to settle matters at sight with a mortal combat—*may not* be any better than the colony where the opposite state of things prevails, but the probability lies in that direction, I think. Degeneracy and atavism are things to watch out against. Page 64.

BLACK FOUL BROOD AND ITS SPREAD.

Mr. Stewart's paper on black foul brood is a very lucid one. And when the disease *seemed* to leap four miles through the air he proved beyond reasonable doubt it seems that bees from diseased apiaries were there. This appears to settle it that it is bees that carry the germs, either in their honey-stomachs or about their bodies somewhere. This is a contribution of considerable magnitude to our knowledge of black brood. When infecting germs *do* float in the air it is desirable to know that fact; but we don't want to know it when it isn't so. Not only in bee-diseases, but in other diseases also there is a bad, lazy tendency to assume that infection must have traveled in the air when other possible routes have not been half explored. Page 65.

BEE-PARALYSIS NORTH AND SOUTH.

O. O. Poppleton draws a decided rein on a prevalent dictum, on page 69. Paralysis more prevalent in the South not because Northern summer climate is unfavorable to it, but because Southern winters don't kill off the infected colonies and Northern winters do. I am not sure that this view of the case is the whole story, or even half the story; but it is worth thinking of at least. I do not remember to have seen it in print before, that unusually tight clinging to the combs is a prominent sign of paralysis. I suppose this is in part because the diseased bees have never done any work, and therefore the original sharpness of their toes has never been dulled. It is of interest that Mr. Poppleton finds sulphur an effective cure—and yet he thinks the better tactics to be to pull down the diseased colonies and build up healthy nuclei with the proceeds.

TEXAS AND HER FLOWERS.

Happy Texas! Has 13 months of flowers in a season! This is not wholly a joke, as it is not claimed that there are 13 months in a year. Just notice the possibility of a season being somewhat longer than a year—the too-previousness of the mistletoe and the persistent ever-blooming of the cotton spreading things beyond the calendar sometimes. But alas—

> Nor bee nor bee-keeper can bunt
> To make flowers give down when they won't.

And horsemint, which we used to think of immediately when Texas honey was spoken of, is over large areas much less abundant than formerly. Prof. Scholl lays this to several successive dry years cutting off the supply of seed. Quite likely he is right in the main; but Nature has many such pranks, and some of them can not be solved so easily. In my range there used to be square miles of blue lupines. This was on "oak openings" sort of land—and much of the territory would have yielded a good swath of lupines if mown with a scythe. Now there are only scattered plants, and here and there a spot where they are close enough to be neighbors. What's got my lupines—and will they ever come back? Rest of us can hardly find a match for the Texas mesquite, which has two distinct periods of bloom, the second beginning when the beans from the first bloom are getting ripe. Say, that makes two seasons—two seasons in one year. And we wind up as we began, saying: Happy Texas! her seasons are a month longer than elsewhere in the world—and, indade, there are twice as many of them! Page 85.

Northern Michigan a Bee-Keepers' Paradise.

By W. Z. HUTCHINSON.

"Bells' ding dong, and choral song,
Deter the bee from industry;
But hoot of owl, and 'wolf's long howl',
Incite to moil and steady toil."

Northern Michigan, the home of the huckleberry and the speckled trout, where the wild deer drinks deep from little sparkling lakes with white pebbly beaches, where forests of magnificent beech and maple stretch away for miles unbroken, where still lingers some of Nature's wildness, here is proven the truthfulness of our opening adage—here is a veritable paradise for the bee-keeper. From Canada to California have we sought for the Eldorado, only to find, as is often the case, that it lies at our very door.

Four years ago I attended, at Traverse City, a meeting of the Michigan State Bee-Keepers' Association, and two things struck me quite forcibly: The uniformly good yields reported, and the wonderful interest shown in discussing the problem of how to have populous colonies early in the season, that the best advantage might be taken of the red raspberry bloom.

THE WONDERFUL AND UNIFORM YIELDS OF NORTHERN MICHIGAN.

The next year I attended another meeting of bee-keepers held in that part of the State, only further north, at Bellaire, Antrim County, and again I was surprised at the uniformly good yields reported, and upon inquiry as to the source, the reply was almost invariably "raspberries". Occasionally some one would add milkweed, or basswood, or willow-herb. I believe I quizzed the members of that convention more persistently than I ever did those of any other convention. If a man that I had cornered got away, I immediately corralled another. The man who occupied the room with me at the hotel, where we stopped, was snoring when I asked my last question. Then I went home with Mr. S. D. Chapman, and stayed a day or two, looked over the ground from which his honey was gathered, and listened to the ups and downs of his apicultural life. Red raspberries and bees have certainly pulled his feet out of the slough of debt. I became thoroughly satisfied that this region was the best place I had yet seen for the production of honey; but I wanted to see it with my own eyes when the harvest was in full swing, so, July, 1903, with camera and pencil, I started in at Traverse City, and spent nearly two weeks visiting bee-keepers from there along up north until near Charlevoix.

A BIT OF WILDNESS.

I did take one little side-trip to which I would like to devote a few words. The grand forests of white pine with which so much of this State was once clothed are now nearly extinct, and when I heard there was still a small tract in Otsego County, I thought "Here is an opportunity to get photographs of something that in a few years will be difficult to find—forests of pine in their native wildness, lifting their beautiful, plume-like tops 150 feet towards the heavens". After leaving the cars I walked five miles along a logging road, lugging my big camera with me, ate with "the hands" at their shanty (and it was pretty good fare, too), slept with the "boss" in his bunk, and the next morning started through the woods for a small lake, about two miles away, along the banks of which the men told me I would find the finest growth of pine. It had rained during the night, and my trousers and shoes were wet through long before I reached the lake—but an enthusiast does not stop for such trifles as that. I loosed the boat fastened to a stake, and floated out over the clear water—so clear that I could see the bottom at a depth that made me feel uncomfortable to think that I was over such deep water. On all sides towered the massive walls of dark green pines. The morning sun was driving away the wreaths of white mist that still lingered in their tops. Beautiful water-lilies, white and yellow, in all their purity and freshness, floated in great profusion on the surface of the water. As I rounded a little point, a red deer, standing knee-deep in water, eating lily-pads, gave one frightened look,

MILKWEED IN FULL BLOOM.

This picture shows the blossoms about one-fourth natural size. The leaves are a deep, glossy green, while the blossoms are a lilac purple, shading off into a magenta red. Later in the season each bunch of blossoms is replaced by a seed-pod nearly as large as a banana, and, attached to the seeds when ripe is some of the softest, silkiest, fluffiest, whitest, downiest substance that ever grew. Besides furnishing an abundance of honey, the blossoms also secrete a sort of gluey substance that sometimes catches a bee by the leg—usually the bee pulls away.

PATCH OF MILKWEED BY THE ROADSIDE.

In some parts of Northern Michigan milkweed furnishes an abundance of pasturage. In 1902, Mr. Ira D. Bartlett secured 75 pounds per colony from milkweed alone. The plant grows freely by the roadside, in openings, and really becomes a weed in crops that can not be cultivated—oats, for instance. It is about as difficult to eradicate as a Canada thistle. The honey is of good body, light in color, and has a flavor similar to the odor from the blossom—something like vanilla.

three magnificent bounds, and disappeared in the pines. Over all was a stillness that could almost be felt. It seemed as though I had never been nearer Nature's heart. The peace, the joy, the *reverence*, that came over my soul, is beyond my power to express.

SOIL AND CROPS—GINSENG CULTURE.

But, to return: A large portion of Northern Michigan, that portion I am describing, from Traverse City north to Petoskey, is hard-timber land—the grandest beeches and maples that I have ever seen—and the greater portion of the land is still uncleared. The best of the timber is being cut for lumber, then the small and crooked trees are cut up into furnace-wood. Some two years ago, or thereabouts, Mr. Chapman's son bought a tract of wild land just across the road from his father's, paying $4.00 an acre for it The timber, fit for lumber, had been cut. Last winter he was cutting up what was left into furnace-wood. After paying for the cutting and hauling the timber was netting him $16 an acre. Such land is now worth about $10 an acre. The soil is a sandy loam, which, aided by the cool, moist climate, produces the finest potatoes in the world. No other portion of the country is better adapted to the production of winter apples; and, while I am about it, I may as well describe a somewhat novel industry that flourishes here—the raising of ginseng for market.

Originally the plant grew wild, in great abundance, in these north woods, but men made a business of hunting for and digging it for the market (sometimes making $3.00 or $4.00 a day), until it is now very seldom that a plant is found in the woods, but I visited several gardens where it was under cultivation. The plants to start these gardens were dug up in the woods and set out. The natural home of the ginseng is in the deep woods, and in order that it may flourish under cultivation, the same conditions must be supplied. Leaf-mold is brought from the woods for use in making beds, and a shade is furnished by an immense frame-work 6 or 7 feet above the ground, upheld by stout posts, and covered with laths nailed on about an inch apart. The sides of the enclosure are also covered similarly with laths. In short, one way of describing the shade would be to say that a huge box was made of laths placed about an inch apart, and then turned upside down over the garden. The plants are set in rows about a foot apart, in beds 5 feet wide and about 100 feet long, and the dark, rich green of the leaves, growing in that semi-darkness, like that of a deep woods, is something delightful to behold. The dried roots are worth about $7.00 or $8 00 a pound, while the seeds are sold at such a fabulous price that I would rather not mention it. I was shown one bed of old plants, bearing aloft their bright-green seed-pods (and turn to scarlet when ripe), and told that if those roots should be dug and marketed, after the seeds had ripened, that the seeds and roots would bring $500! Just think of it, a piece of earth 5 feet wide and 100 feet long, bearing a crop worth $500!

The market for ginseng is in China, where it is regarded with a sort of superstitious reverence—supposed to possess unusual curative virtues; in short, a cure-all and a charm combined. Ginseng is a perennial of slow growth; the root continuing to increase in size for several years. Making a fortune raising ginseng is rather slow at the start (it takes a year and a half for the

HOME-APIARY OF S. D. CHAPMAN, OF ANTRIM CO., MICH.

Mr. Chapman winters his bees in the cellar, and this view was taken in March soon after they were put out. There were still patches of snow in the edges of the woods. Years ago Mr. Chapman had fine crops of honey from basswood. When this was lumbered off, there was scarcely anything left to produce honey, as the country was nearly all forest, and he seriously contemplated abandoning bee-culture. Finally lumbermen began cutting off the hard timber, and this left the land so nearly unoccupied that red raspberries sprang up and changed the location to one of the best for bee-keeping. From 150 colonies in 1902, Mr. Chapman secured $1000 worth of raspberry honey. In 1903, from 190 colonies, in two apiaries, he secured 23,000 pounds of extracted honey.

APIARY OF JAS. MARTIN, OF KALKASKA CO., MICH.

This apiary, of about 100 colonies, was built up in two years from 12 colonies, and a little over 4000 pounds of extracted honey taken. The enthusiasm of a beginner, together with raspberry bloom, did it.

seeds to germinate), but, if one has the patience to wait, it is very profitable in the end. Mr. Chapman told me that he sometimes wished that he had "gone into it" years ago when he began bee-keeping, but doubted if he should bother with it now. One man near Mr. Chapman's started two years ago, and now has gardens worth $5000, but he advertised and posted notices all over the country offering good prices for roots, and probably paid out a good share of his $5000 for stock.

THE RED RASPBERRY AND ITS HONEY.

But I must stop wandering and get down to business. I must take up the feature in which bee-keepers are specially interested. When this hard timber is cut off the wild red raspberries spring up and occupy the ground, and furnish the most reliable bee-pasturage there is to be found. The luxuriance of the growth is something wonderful. Many times, in riding along a woods-road, have I been able to reach out and pick the luscious ripe berries as we passed—the bushes being so tall and bending with fruit. I supposed that the wild red raspberry blossomed only a week or two, and then was done, but such is not the case. It keeps in bloom fully as long as white clover. It begins the last of May or the first of June, and when I was there, the latter part of July, the bees were still working upon it. If there is a drouth in August, and there are rains and warm weather in September, it sometimes blossoms again, and furnishes a second crop of honey. One bee-keeper told me that his daughter visited him the Fourth of July, and they went out and picked enough berries to have a shortcake; in September she came again, and they repeated the operation. While the honey is not quite so white as that from clover, it is still classed as a light honey, and has a delicious raspberry flavor.

The time will probably eventually come when this country will all be cleared up and cultivated, as is the case now in the older portions of the State, but that will be many long years hence. For 20 or 25 years it is likely that this portion of the State will improve as a bee-keeping country—more of the timber will be cut off; and the acreage of raspberry increased. In some localities of this part of the State there is still some basswood, but it certainly will not remain there many years. The same may be said of the willow-herb, or Epilobium. In some places milkweed furnishes a good crop of fine honey. Clover is already beginning to creep over the cleared fields.

Perhaps the bee-keepers already here will not thank me for thus exploiting their territory; they certainly would not have done so a few years ago, but bee-keepers are learning that it does not pay to crowd. Selfish motives alone prevent this. In a new country settlers are always welcome, and I doubt if there is a bee-keeper in this region who would not welcome other bee-keepers, and help them to find good locations, provided they came in the right spirit—willingness to go back a little farther rather than crowd some bee-keeper already located. How I should delight going into that region, buying 40 acres of land in some romantic location, clearing it up and planting it all to winter apples, and at the same time establishing a series of out-apiaries. If I were not located just as I am I certainly should do it.....

But if I were a young man just beginning in bee-keeping, or a middle-aged man, for that matter, and trying to make a living keeping bees in a poor locality, I should certainly go to Northern Michigan. I would not do it rashly. I would not sell a good home, pack up my things, and drop down almost anywhere—I should spend a year or two in investigation, and learn from personal observation, long continued, the best place to go.

In this region bees are wintered both indoors and out, but the most successful wintering that I came across was that of the bees belonging to Ira D. Bartlett, of Charlevoix County. Although Mr. Bartlett is a young man, and unmarried, he has made a wonderful success of bee-keeping. For one thing, he is very particular. The hives must all stand exactly *so*, and the covers be put on square, and so on with everything. Perhaps these things in themselves do not bring success, but the trait of character that demands them is quite likely to command success. He has a bed, stove and dishes in the house near his apiary, and he literally lives with his bees during the working season, cooking his own

APIARY AND HOME OF GEO. H. KIRKPATRICK, OF KALKASKA CO., MICH.

A few years ago Mr. Kirkpatrick was making a scant living keeping bees in Indiana. A visit to Northern Michigan showed him its possibilities, and he was not slow in making the most of them. He now has a farm and the beautiful home and apiary shown above. In 1903 his 138 colonies increased to 206 and stored about 13,000 pounds of extracted surplus honey.

APIARY OF IRA D. BARTLETT, OF CHARLEVOIX CO., MICH.

Mr. Bartlett began with a single colony when he was 14 years old, has steadily increased, with no winter losses, until the spring of 1902 he was old enough to vote, and owner of an even 100 colonies, which he the next year increased to 150, and secured 4000 pounds of comb honey, besides extracting 7000 pounds. He dresses in white duck from head to toe, and believes that the use of this light-colored clothing saves him many stings and much annoyance from the bees. A train of cars was passing when this picture was being taken.

meals. His father lives in town, a mile and a half away, and when it comes time to pack the bees for winter they are hauled home and packed in the boxes that stand in his father's back yard. In the spring they are unpacked and hauled out to the apiary. The reason he gives is that he wants them under his eye all the time, and where they will not be molested by prowling marauders. Mr. Bartlett's onward and upward career as a bee-keeper is one that I shall watch with pleasure.—Bee-Keepers' Review.

Our Sister Bee-Keepers

Conducted by
EMMA M. WILSON, Marengo, Ill.

Late Fall Warm Days—Apple Honey.

DEAR MISS WILSON:—Referring to yours, "I never knew before that there are localities where there are no warm days after buckwheat frost" (page 88), I will explain more fully.

Our sun has considerable power well into October, and we have many beautiful days some years, that would be quite summery but for the icy breath—our foretaste of winter—that sweeps down from the Adirondacks or across the Lake from the Green Mountains to us. These winds are bracing tonics for worn-out nerves; but prevent any work in the hives being practicable after the supers are removed, for we leave them on as long as there is a chance for an extra hundred pounds, or until after the frost that usually occurs at the full of our September moon.

Our seasons are about a month shorter at each end than they are in Orange, N. J. Vegetation starts from 4 to 6 weeks later, but it hustles! In September we have the Jersey's October. Our October is their November.

I promised to tell you of a strange experience in our bee-yard last fall. Here it is:

We extracted just prior to the untimely frost of Sept. 10, after which we had several warm, beautiful days. As the bees were quite active I left the supers on for a week or two, thinking they might be working on a patch of flora that had escaped the frost. When the weather changed and the supers were removed, I found in them over 400 pounds of a delicious-flavored honey, utterly unlike any ever before gathered at Clovernook.

Our apiary is in our apple orchard. We had a very heavy yield this year, and twice each day the windfalls were collected and fed to our ducks. They ate three bushels a day. The honey had a very decided flavor of apples, and I concluded the bees got their nectar from those left in the grass or that rolled under their stands; but still I could not account for the 400 pounds as returns from the few apples that we had missed. I silently puzzled over the matter quite a bit.

Early in November, when I was fill-

WILD RED RASPBERRY IN ALL ITS GLORY.

The timber has been lumbered off, or cut for furnace wood, and the raspberries have completely occupied the ground. This view was taken in Kalkaska Co., Mich., and there are thousands of acres in that and adjoining counties where similar growths of berries each year "waste their sweetness on the desert air"—there are no bees there to gather the nectar.

ng an apple order for a A No. 1 fruit, I could scarcely find a perfect Tolman Sweet. They were covered with little punctures—small, black specks. These trees are in the bee-yard. None of our other varieties showed these spots. I remembered noticing bees crawling over apples and tap, tapping on the skin with their tails, and when I saw these spots it seemed as if they might have punched the holes with their stingers, and then turned around and licked up the nectar.

A friendly bee-keeper in Saratoga, to whom I confided my suspicions, wrote me that she had a similar experience in her orchard, only more so. Her fruit was badly punctured, and the bees were so thick on her windfalls that they drove her away when she tried to gather the fruit.

Our Farmers' Institute sent us last week, among other speakers, Prof. Stewart, of the Geneva Station, whose specialty is the diseases of fruit, especially apples and trees. I privately told him my tale, and gave him two sample apples, which he took away, and after careful testing will report to me results, which he expects will simply show whether the defects in the apples are due to disease or the sting of an insect.

Usually, you know, when the apples are growing mellow, the buckwheat bloom is at its best, and after the frost the bees take only short flights at about noon. At that time in the fall we gather our apples. This is the first fall, in my 10 years' experience here, that we have had so early a frost followed by such beautiful weather, and if my surmises are correct, this may account for the experience.

I will send you Prof. Stewart's report as soon as it is received.

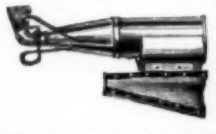
(Miss) Frances E. Wheeler.
Clinton Co., N. Y.

That report of Prof. Stewart will be awaited with much interest. But, surely, the finding will not be that the bees had any hand (or sting) in puncturing the fruit. At one time Rev. W. F. Clarke gravely asserted that bees used their stings as trowels with which to work the wax in building their combs, but no particle of proof was ever given for such statement, and no one takes it seriously nowadays. It is extremely doubtful that the bee ever uses its jaws to puncture fruit, and still more doubtful that it uses its sting for that purpose.

It is true that bees do make a sort of tapping with their tails that you have been observant enough to notice; but when you saw them doing so did you ever see one thrust out its sting? It ought easily to be seen, if the sting is thus thrust out. Did any one, in any case, ever know a bee to thrust out its sting while in the act of searching or taking a lunch? It might be suggested, also, that if a bee should sting an apple and then turn around to lick up the escaping juices, the act of turning around could be plainly seen. Please note next fall whether such turning around really occurs.

It may be interesting to some of the sisters to know that Miss Wheeler is a member of the faculty of the Columbia School of Poultry Culture in New York State. She makes a specialty of rearing high-grade Pekin ducks, most of which she sells at good prices as breeding stock. She also devotes a considerable portion of her time to bees, having found the combination of bee-keeping and poultry culture both profitable and pleasant.

Proceedings of Conventions



ONTARIO BEE-KEEPERS' CONVENTION.

REPORTED BY MORLEY PETTIT.

(Continued from page 152)

Mr. R. F. Holtermann read a paper on

THE PAST WINTER'S LOSSES AND THE DEDUCTIONS TO BE DRAWN THEREFROM.

In the Canadian Bee Journal for September appears a letter from the veteran statistician in the Department of Agriculture for the Dominion, Mr. George Johnston, which reads in part as follows:

"We certainly had a severe loss in our bees here. I lost all I had in Nova Scotia. East of the Ottawa I think more than 75 per cent of the colonies were lost. That would mean 53,000 or 54,000 colonies dead, leaving not more than 17,000 that came through the winter, while 50 per cent loss west of the Ottawa would leave the stock of bees not more than 60,000, giving in all 77,000 where the census of 1901 gave a total of 190,000. This is a terrible death-rate, and at $2.00 a colony the loss through the winter's action would not be far from a quarter of a million dollars for bees alone, to say nothing of the loss of honey through not having the bees. If the whole 77,000 give off two swarms this season, we would still be 69,000 to 70,000 colonies short of what we were in 1900."

The above statement, coming from such a source, has upon it the stamp of authority. I had previously placed the percentage of loss at 70, which in my estimation is not too high.

In estimating the financial loss, we must remember that a great many of the combs and hives in which the bees perished have become useless, the combs having been destroyed by that enemy (and friend) of the bee-keeper—the moth. The hives sometimes find a market at a loss, but quite often the moth renders them partially valueless, carelessness and time completing the work of destruction. Three or four dollars per colony would be a very conservative estimate of the loss in bees and hives. Again, the majority of the colonies that survived were in too weak a condition to take proper advantage of the honey-flow when it came, resulting in the loss, through lack of workers, of a large percentage of nectar which might have been harvested.

Looking at it from a national standpoint, there would be a financial loss to the country of at least half a million dollars, and a blow to the industry from which it will take years to recover. So much for the fact. Next in my address I am called upon to make deductions.

Webster's Dictionary gives as the meaning of deduction, "That which is deducted or drawn from premises by a process of reasoning; an inference; a conclusion." Let me confess that this is a line of work I like, however feeble my powers may be to perform. Looking at bee-keeping as a whole, I see in many of the articles which are written for bee and agricultural papers in general, in the items in the general press, even in the addresses at conventions, and in the discussions which take place, a great many statements as to what the exponent does, or informing others what they should do, but painfully little as to how he should act under given conditions, and showing why it should be done in that way. There are laws in Physics, in Chemistry, in Nature, which can be explained and made intelligible to even a simple-minded individual. Without the above, in connection with instruction, there can be no intelligent action and no solid, intelligent progress.

Conditions studied are of prime importance, and the foundation of successful action, and such a course would lead to greater harmony in our discussions, greater intelligence and greater progress in the bee-keeping industry, and vastly benefit us individually and collectively.

To learn to think truly, and not merely imitate or ape would not only lessen the per cent of winter loss, but would revolutionize many of our lives for time, yes, for eternity.

May we from last winter's experience come to the conclusion that Canada is not suited to this, the æsthetic branch of agriculture, or may we even say that it is not a safe branch of agriculture in Canada? Far be the thought from us. As to quality, wherever shown, the quality of Canadian honey has proved itself to be unsurpassed. Judges—not Canadian, even foreigners—have again and again pronounced in favor of our honey. British experts, honest men, who had a love for and a fostering interest in the development of bee-keeping in their own land, have told me and others that our Canadian honey leaves nothing to be desired.

As far as the winter is concerned, we have among us those who winter bees with as great certainty and success

as the shepherd and the herdsman winter his flocks and herds. In this respect what one can do another may. Shall we then say that the past winter was a winter in which bees could not be wintered with success? We must admit it was the most disastrous for many years. To my recollection we have had none like it for 23 years, but both in repositories and outside bees were, during the time under discussion, wintered with success. Such a line of argument must then fall to the ground.

Shall we then say that a great many do not know the conditions under which bees can be wintered with reasonable safety? If we can judge from what we see and hear, we may surely make this assertion with safety. There are many who do not know, who can not know, the conditions under which bees can with reasonable safety be wintered. They have begun bee-keeping through the acquisition of a stray swarm, or the microbe of bee-fever has taken root in their mind through the success of one who has devoted his time to the work. They see the returns, but not the labor. No literature upon the subject is sought; they have no proverbial "long-felt want," or short either, for knowledge. An old hive is bought, perhaps with foul-brood germs; this neglected hive may be a breeding-place for this disease, and the moth. During their short career as bee-keepers, if product they have, it is oftener than not, taken in such a shape that when sold it depresses the market. They sell at a sacrifice. This class of bee-keepers is a menace to apicultural society, and cannot be too strongly discouraged. With the beginner who sees in it a business and desires to engage in it in a business-like way, we as individuals and especially as an association having a Government grant, entrusted with public money, should have every sympathy.

Let us state the truth, that bee-keeping is an occupation full of problems, which multiply to our view as we gain experience and rise in it.

The occupation we know nothing of is the one which appears simple and easy to understand. Let us take home the wholesome lesson in spiritual as well as temporal life, imparted when man fell, "In the sweat of thy face shalt thou eat bread"; to produce good, evils must be resisted and difficulties overcome. We can easily recognize this class who do not know the conditions under which bees can be wintered with reasonable safety. There is, however, under this head another class, perhaps not as numerous, but more dangerous, who can do an immeasurable amount of harm in influencing the less experienced and less thoughtful bee-keeper. I refer to the blind leaders of the blind. It is a well-known joke among the veterans that when a bee-keeper has a little experience he knows more than he ever will again; he can tell you all about it; this he realizes he never can . t a later stage of the game.

I am fairly familiar with the various branches of agriculture, having been brought up on a farm, worked on a farm, taken a course at the Ontario Agricultural College, and kept in touch with the developments of modern agriculture since. Seeing from that standpoint, it seems to me that no class of agriculture is handicapped as bee-keeping is with such inefficient instructors and experimenters in one way and another. Anything and anyone is good enough to take the bee-department, when in other lines it would not be offered or tolerated. These agencies, be they Government or private, by their action endorse the thought that it requires no training to keep bees, and these agencies help to swell the ranks of those who increase the percentage of winter loss, and who are a menace and a detriment to the agriculture of a country.

Our world's governments, if we except some countries in Europe, our public institutions, our press, in the development of our various branches of agriculture, remind me largely of the unjust father who had a large family to provide for, and found it impossible to give to every child a first-class education and position, so he sent some to school, college and university; they became noted men; others, however, instead of educating them at school and university, he set at breaking stones on the road; the children became marked contrasts; the former in time looked down with scorn upon the latter; the stone-breaker as the eminent man's carriage drove by, justly despised and perhaps envied his rich brother because he had been elevated by having given to him what was justly the stone-breaker's share, and the head of the family was judged for his partial action, and condemned by every just and thoughtful person. Some branches of agriculture are rolling by in their carriages, whilst apiculture and apicultural markets are still in the stone-breaking stage.

Then we see those who know how to prepare their bees, but are too busy, too careless, and too indifferent to put that knowledge into practice. We know of many who undertake too much, who have too many irons in the fire; the return they get for the capital they have invested is a loss, a reputation for lack of thoroughness, to say nothing of added worry and annoyance. The person who is constitutionally a little behind should never keep bees. The "too many irons in the fire" man never reaches the degree of success where that success gives him a stimulus and pleasure of which the ordinary man knows nothing. We are in the days of the specialist; no man is competent to lead in a variety of agricultural subjects.

My last deduction is that last winter's experience, and years of experience, teach us that bee-keeping is a branch of agriculture which punishes sooner or later the careless, inexperienced bee-keeper, and the person who cannot give it due attention. And it rewards liberally the careful, energetic, thrifty and studious performer; in other words, it is worthy the attention of our brightest minds and dispositions. This last deduction is sound, and the more we blazon abroad this fact, the better for bee-keeping, and the better for the country. The more successful bee-keepers' will we have, the less of the dangerous elements. Bee-keeping is an occupation peculiarly dangerous to one of a slothful or improvident disposition. Action has to be taken when present circumstances would not spur us to that action. To prepare for a honey-flow weeks, yes, months, before, when cold would rather draw us to the fireside; to prepare for a rush of honey when scarcely a bee is stirring in the apiary, requires energy and foresight. The life history of the bee, a knowledge of the best implements, mechanical training, botany, chemistry, entomology, physics, and meteorology, the nature of soils, physical strength, mental endowments and business acumen possessed and applied, all will be rewarded when one engages in bee-keeping. This is more or less true of all branches of agriculture.

In choosing a life profession the parent and child often choose a calling where the means financial, mental and otherwise, can give no hope of being in anything but the vanguard of the profession. Desire in this should be governed by solid sense. The careless and thoughtless, and the poorly-equipped and shiftless, better not follow agriculture as a business, and select something which does not require so wide a range of information and powers. It would be better for him to become a lawyer, a doctor, a merchant, a politician, or the like.

Strictly speaking, my subject ends here, and yet I venture an addition to what has been said, to say a few words upon the additional prevention of these winter losses. Seeing that every colony has a fertile queen, of the best wintering strain, and 30 pounds of winter stores, would reduce the percentage of winter loss very much. The colder it is the more compactly bees cluster. If stores do not reach the cluster they may not be able to break the cluster to reach the stores, and starve. This is frequently the case during prolonged cold-spells, and only a moderate amount of stores in the hive.

The moisture given off by the bees should be expelled from the hive. After allowing in outside wintering sufficient packing to protect from cold, there are two methods advocated. By means of one, the fresh air is brought in at the entrance of the hive, and the air laden with moisture and carbonic-acid gas carried off at the same opening.

The other method is to bring in the pure air at the entrance and carry the foul air by the pressure from the fresh air entering the hive, and the natural tendency for the warmed air to rise, by these means to carry the exhausted air through the packing above.

Arthur C. Miller, in the Review, lays down in no uncertain tones that the entrance is the proper opening for fresh air, and also the outlet for foul. In a stove we have the place where the fresh air enters, as in the hive we have the entrance to the hive. In the wood and fire we have combustion and oxidation, as with the bees and honey we have combustion and oxidation. When the fresh air entrance becomes the natural outlet for the smoke and carbonic-acid gas, then the entrance to the hive will be the natural outlet for the exhausted air of the hive.

In the common entrance and outlet we have what is known in science as a friction of air currents, the bees wasting energy in expelling it, as they do in forcing the warmed atmosphere down. Another objection is that more or less of the exhausted, impure air, must be drawn back into the hive by what is known as diffusion of gasses. But what makes this advice so dangerous in colder climates—and I have no doubt that this advice has led to the loss of many a colony of bees

during the past winter—is that as the moisture-laden air returns to the colder part of the hive, it condenses and freezes, the distance inside of the hive the moisture condenses depending upon the cluster, the size of the hive, the size of the entrance, and the efficiency of the packing. Such conditions were common, and the cold and damp atmosphere with the frozen entrance destroyed the bees. Let me say that cold alone rarely kills bees. I saw in Norfolk during the latter part of March bees alive and apparently in fair condition that had been standing out all winter in hives, with upper stories, and a 7/8-inch hive-cover, the combs and the bees in the lower chamber of the hive did not even have a thin cloth above them, the nearest protection was the warped 7/8-board at the top of the upper story. Cold was there surely in abundance, but no moisture lingered in the atmosphere about the bees.

The right method is the chimney principle—the foul air carried away at the top, packing enough to keep the bees warm, but not so abundant or so compact that the foul air could not rise through the packing on the hive. Here where the moisture leaves the hive the hive is warm, the heat of the cluster and the air rising and no condensation takes place until the moisture reaches the top of the packing, or until it strikes the under side of the outside case-cover. Here it can be disposed of at favorable periods by allowing moderate ventilation under this cover. The common opening ventilator is wrong in principle in any climate, but particularly injurious and dangerous in a cold climate. I trust I have made this clear.

In inside wintering there have been heavy losses, chiefly in respositories which could not maintain an even and sufficiently high temperature. The moisture above-mentioned has also not been carried off. This combination with low temperature resulted in heavy losses.

Our own repository, which will hold 1,000 colonies, and has this winter 700 in it, is especially built with the object of securing a uniform but sufficiently high temperature. The fresh and the foul air is not brought in at the same entrance, but for convenience and economy of space the back of the hive is raised two inches on the stand and 3/8 inches from the bottom-board. Through this rear-opening the foul air escapes.

In conclusion, let me say, not alone will these periodic attacks occur to bee-keeping, but the cheapest production and the best goods will not be secured, neither will we have our markets developed to their best until we secure that recognition for bee-keeping and that aid in the development of the industry which has been given to other branches of agriculture. We may bluster, we may make statements that bee-keeping does not require such aid, but it cannot be shown by a line of logic that in this respect the principles which govern its development are different from other branches of agriculture. Dairying would not go back to the days before it had no fostering care. Fruit-growers value the help they are getting; the poultry industry has been put upon a more profitable footing; and so might bee-keeping have a new era of prosperity under proper guidance.

R. F. HOLTERMANN.

J. K. Darling—Much loss of bees was caused by the dearth of honey last season. The bees quit breeding too early, and did not have enough honey for winter.

J. B. Hall—They started breeding too early and exhausted themselves. Old age comes not from the number of months bees have lived, but from the number of babies they have reared.

Mr. Holtermann—Top ventilation is not so necessary in the cellar as out-of-doors. It is not a question of bringing the bees out alive. They must be in good condition for best results.

Mr. Sibbald—They must have heat to expel the moisture at the entrance.

D. W. Heise—The loss was caused by the continued low temperature. I had wintered successfully with no packing on the sides and bottom—only on top, but that was not sufficient for the last winter.

Mr. Chadwick piles his bees five high in the cellar; has ventilation all at the entrance; and very little air is admitted to the cellar. He sets his bees out on April 27.

Morley Pettit considered the cover might well be tight when the hive is pried up 3/8-inch from the bottom-board at the back. Of course some upward ventilation through a chaff cushion is good. The point to be observed is, warm covering for hives in the cellar to raise the hive temperature above that of the cellar air. This facilitates change of air in the hive.

RESULTS OF APIARIAN EXPERIMENTS AT THE CENTRAL EXPERIMENT FARM—CELLAR WINTERING OF BEES—DESCRIPTION OF CELLAR AND GENERAL ARRANGEMENT OF HIVES.

The cellar is below a private house. The walls are of stone and the floor of cement. The bee-room, 11 feet 6 inches wide by 15 feet long and 7 feet high, allows three tiers of shelves and two passages. It is boarded off from the remainder of the cellar by a partition which extends all around the chamber, and far enough from the stone wall to allow of an air-space. Should there be enough bees to fill the cellar the boarding could be left out. Under the cement floor a layer of one foot of stones varying in size acts as a drain and keeps the cellar perfectly dry. The lowest shelf is 18 inches from the floor, the second 20 inches in the clear above, and the third 20 inches above that. Neither the hives on the third or uppermost shelf nor the uprights supporting the shelves touch the ceiling, so that no vibration can reach the hives from above. This chamber is thoroughly ventilated, as is also the whole cellar. Before entering the bee-room is a smaller compartment with a door leading outside and another leading to the bee-room. Both rooms have sliding ventilators in the doors, so that outside air may be let in at will. Ventilation is carefully attended to and sudden changes of temperature are avoided; for this, a thermometer which is always kept in the cellar, is watched. The best temperature for the bee-cellar has been found to be from 42 to 48 degrees Fahrenheit. This arrangement has given entire satisfaction. In former years there was not proper ventilation, and the cellar was always damp. Since the concrete floor has been laid and the ventilators put in, the cellar has been much drier and cleaner. It is also rat and mouse-proof, which is a very great advantage.

Experiment No. 1.—Six colonies were put into winter quarters in the cellar and placed on the shelves. Under the back end of each hive was placed a 2-inch block, each hive was besides raised from its own bottom-board by a one-inch block being placed at the back so as to insure free ventilation. All front entrances were left wide open, the wooden covers were all removed, and replaced with cushions made of chaff 4 inches thick, sufficiently wide and long to lap over the hive 2 inches. Temperatures were taken once each week all through the winter and were kept very even, from 44 to 48 degrees. The bees were quiet, only a very slight hum being noticeable up to February, when, the temperature having risen to 48, the bees began to get uneasy and made considerable hum. Cold air was carefully let in during the night by opening the slides in the doors and closing them in the morning; this of course lowered the temperature and the bees quieted down. During the past winter [1903-'04] every colony in this experiment was perfectly dry and clean, and all came out in excellent condition. Average weight of each hive when put into winter quarters, 58½ pounds; when taken out on April 22, 49¼ pounds per hive; showing that each hive had lost 9¼ pounds on an average.

Experiment No. 2.—Six colonies were put into the cellar and placed on the shelves, a 3-inch block being placed between the bottom-board and the brood-chamber only in front, making the full entrance 3 inches high across the whole front. The wooden covers were removed and replaced with a chaff cushion. Temperature same as in Experiment No. 1. During the whole winter all the colonies in this experiment were perfectly dry and clean, and showed no uneasiness of any kind. The bees could be seen hanging in a quiet cluster below the frames any time during the winter. The average weight when put into winter quarters on Nov. 23 was 59 pounds and 12 ounces; when taken out April 22, 51 pounds and 8 ounces; showing that each hive had lost on an average 8 pounds and 4 ounces.

Experiment No. 3.—Six colonies were put into the cellar and placed on the shelves, with tops and bottom-boards of the hives left on, just as they were brought in from the bee-yard. They were watched for dampness, mold, or dysentery, also to compare the amount of honey consumed. Temperature of cellar the same as in Experiment No. 1. During December and January all were very quiet. During February there was considerable humming. Drops of water were noticed along the entrances of three hives. There were but very few dead bees on the bottom-board and no sign of dysentery. On examination when put on the summer stands, two of the hives had considerable molded combs. The aver-

age weight when put into winter quarters, 58 pounds and 10 ounces; when taken out April 22, 49 pounds and 3 ounces; showing that the average loss of each hive was 9 pounds and 7 ounces.

Experiment No. 4.—Six colonies were put into the cellar and placed on the shelves, with bottoms of the hives left on, just as they were brought in from the bee-yard. The wooden covers were removed and nothing left on except a tightly-sealed propolis quilt; the natural entrance was left wide open. Temperature of cellar same as in Experiment No. 1. During the entire winter the bees kept perfectly dry, and a very slight hum could be heard. There were but very few dead bees on the bottom-board and no sign of dysentery. On examination when put on the summer stands all the colonies were found to be in first-class condition. The average weight when put into winter quarters Nov. 23 was 59 pounds and ounces; when taken out April 22, 49 pounds and 3 ounces; showing that on an average each had lost 8 pounds and 12 ounces.

DAMP CELLARS FOR WINTERING BEES.

Many letters are received enquiring whether a damp cellar is a fit place to winter bees in. An experiment was conducted during the winter of 1902-3 with three colonies of bees. During the winter of 1903-4 it was thought best to try this experiment with six colonies in a similar manner as in the previous experiment. Seven pails of water were arranged in such a way that the colonies of bees would rest on the edges of the pails, allowing the full surface of the water to be exposed.

Six colonies were selected for this experiment, all of about equal strength, and all in Langstroth hives, weighing on an average 57½ pounds each. The wooden covers were removed from the hives and replaced with propolis quilts; the bottom of each hive was loosened from the brood-chamber and a block 2 inches square was placed at each corner between the bottom-board and the brood-chamber, ensuring free ventilation from the bottom of each hive. The cellar was kept at a very even temperature of 44 to 48 degrees. The bees could be seen hanging below the frames in a quiet cluster all winter. They were all examined once each week and at no time did there appear to be any sign of uneasiness from the extra moisture. There were scarcely any dead bees on any of the bottom-boards nor any sign of dysentery, and all came out in excellent condition. The colonies were put on the summer stands on March 20; the day being fine and warm, all began flying at once. The average weight of the six colonies when put on the summer stands was 44¼ pounds each. During the days intervening from March 20 to April 5 the weather was cool and no flying took place up to the later date. At this period there was but one good, bright, warm day (April 5) and the bees had to content themselves to remain indoors until April 22, when the weather turned quite warm. The bees then built up very rapidly and were in excellent condition for the honey flow.

A second experiment was tried, adding more moisture. Six colonies were selected for this experiment, all of about equal strength, and all in Langstroth hives, weighing on an average 58¾ pounds each. The wooden covers were removed from the hives and the sealed propolis quilts left on, the bottom-board of each hive being loosened from the brood-chamber and a block 2 inches square placed at each corner between the bottom-board and the brood-chamber, ensuring free ventilation from the bottom of each hive. Seven pails of water were then put on the floor in such a way that the six hives were resting on the edges of the pails, allowing the full surface of the water to be exposed. In addition to the pails of water six inches of sand was spread on the cellar floor between the pails and covering six inches of the floor outside of the pails. There was also a large cotton sheet spread over the six hives. The sand and sheet were kept thoroughly saturated with water once each week during the winter. The cellar was kept at a very even temperature of 44 to 48 degrees and was well ventilated during the whole winter. The bees in this test were more uneasy than in the experiment first described where no sand or cotton covering was used, having to keep up fanning for ventilation. There were also considerably more dead bees on the bottom-boards and several had drops of water along the entrance, but there was no sign of dysentery. On March 20, the day being fine, the colonies were removed to the bee-yard, where all began flying at once. The average weight of the six colonies when put on the summer stands, was 44¼ pounds each. From March 20 to April 22 the bees had but one good flight. After April 22 the weather became considerably warmer, they began building up rapidly, and were in excellent condition for the clover bloom.

The average strength of the six colonies that had the extra moisture was not as great as in the former test, but as soon as they got fine weather they gained rapidly. Care was taken to see that the colonies in both tests had plenty of unsealed stores before fruit-bloom and between fruit and clover-bloom. This was done by uncapping one side of a frame of honey nearest to the cluster, allowing the bees to use up the honey for food and providing space for the queen to lay her eggs. Although so much moisture was in close proximity to the colonies, a great deal of the success of this experiment is no doubt due to the good cellar in which it was tried, the cellar having stone walls, cement floors, good ventilation and the temperature being easily regulated. This goes to show that good ventilation and even temperature have a great deal to do with successful wintering. An excellent plan for ventilating is to have sliding ventilators in the doors, so that much or little air may be let in as desired. Also connect an extra stove-pipe, provided with a damper to the regular heating stove. This may be done by means of a T or an extra flue will answer. Allow the pipe to extend into the cellar. This plan of ventilating has proven very successful.

EXPERIMENTS TO DETERMINE WHICH BEES WOULD CONSUME MOST, OF HONEY OR SUGAR, WHILE BEING CONFINED IN THEIR WINTER QUARTERS.

Eight colonies in Langstroth hives were selected for this experiment, all of as nearly equal strength as could be secured. On September 1 their natural stores were removed from both sets. On September 2 all were weighed as follows:

(*a*). The 4 colonies fed sugar syrup: No. 1 weighed 30 lbs. 7 ozs.; No. 2, 31 lbs. 12 ozs.; No. 3, 31 lbs. 10 ozs.; No. 4, 31 lbs. 3 ozs.; average of weight 31 lbs. 4 ozs.

(*b*.) The 4 colonies fed extracted honey: No. 1, weight 30 lbs. 9 ozs.; No. 2, 31 lbs. 10 ozs.; No. 3, 30 lbs. 12 ozs.; No. 4, 31 lbs. 1 oz.; or an average of 31 pounds.

Miller feeders were placed in empty section-supers, close to the top of the brood-frames, any part of the brood-frames not covered by the feeder being covered by a propolis quilt cut so as to allow the bees a passage through it. By keeping the feeder well packed around, except where the bees enter, the heat is kept in and at the same time the bees cannot daub themselves with the liquid. In both experiments the bees had a constant supply of syrup and honey. Both the honey and the syrup were supplied to the bees at about blood heat. The syrup was made of the best granulated sugar, two parts to one of water by weight. The water was first brought to a boil, then the boiler was set back on the stove and the sugar having been poured in, the mixture was stirred until all was dissolved.

The 4 colonies fed sugar syrup when put into winter quarters November 24 weighed as follows: No. 1, 61 lbs. 4 ozs.; No. 2, 62 lbs. 9 ozs.; No. 3, 62 lbs. 7 ozs.; No. 4, 62 lbs. 0 oz.; or an average of 62 lbs. 1 oz.

The 4 colonies fed extracted honey when put into winter quarters on November 24 weighed as follows: No. 1, 62 lbs. 13 ozs.; No. 2, 62 lbs. 14 ozs.; No. 3, 62 lbs.; No. 4, 62 lbs. 5 ozs.; or an average of 62 lbs. 8 ozs.

The 4 colonies fed sugar syrup when taken from their winter quarters March 22 weighed as follows: No. 1, 47 lbs. 3 ozs.; No. 2, 49 lbs. 4 ozs.; No. 3, 51 lbs. 5 ozs.; No. 4, 51 lbs. 8 ozs.; average, 49 lbs. 13 ozs.

The 4 colonies fed extracted honey when taken from their winter quarters March 22 weighed as follows: No. 1 50 lbs. 9 ozs.; No. 2, 53 lbs. 1 oz.; No. 3, 51 lbs. 13 ozs.; No. 4, 51 lbs. 2 ozs.; average, 51 lbs, 10 ozs.

Difference in favor of the honey, 1 lb. 13 ozs. per colony.

When put into winter quarters they were placed on the shelves in the cellar, and the wooden covers were raised at one end ½ an inch, while the sealed propolis quilt was left undisturbed. The hives were all given extra ventilation at the bottom by placing at the entrance a wooden block between the bottom-board and the brood-chamber, thus raising the front of the brood-chamber 3 inches extra. During the balance of November and December very slight humming could be heard; January and February scarcely any appreciable hum could be heard. During the whole winter there was no sign of uneasiness of any kind and very few dead bees about the entrance, the bottom-boards were quite clean and no sign of dysentery in either experiment. All came out in first-class condition and built up rapidly for the honey-flow.

INSULATING HIVES FOR OUTSIDE WINTERING.

Two colonies of equal strength with good laying queens in Langstroth hives were taken for this experiment. The hives were insulated against the winter cold by cushions in the following manner:

Slats 1 inch thick were nailed at intervals all around the hive; on these was tacked one layer of thick brown building-paper and then a layer of oiled paper, which increases durability and also keeps out vermin. In order to provide extra protection to the hive, a box six inches wider and six inches longer was placed over this with an opening cut at the entrance, 1 inch by 2 inches, all other openings being closed. The wooden covers of each hive were removed and replaced with a chaff cushion 3 inches thick, the latter placed on the propolis quilt, and lapping over the sides of the hive; two layers of paper were then placed on the top of the cushion and a second cushion added, with the top of the outside box over it.

The bees were put into winter quarters November 18. No sound could be heard from these colonies all winter, up to March 10, when a slight hum was perceptible. On March 20, the first bees made their appearance; there were many dead bees at the entrance of the hives. On March 21, the day being bright and warm, the outside cases were removed, leaving the paper and one chaff cushion on during the cold spring. Upon examination, one colony was found to be in fairly good condition; the other very poor, with many dead bees on the bottom-board. A few days afterwards the latter was found to be deserted. The frames in both cases were all dry and clean and had abundance of honey to carry them through from November to the clover bloom. Weight, when put into winter quarters, 53½ pounds each; in spring, 37¼ pounds each, or a loss of 16¼ lbs.

A second experiment was tried similar to the above. Four hives were taken for this test, instead of having them packed single. The four were placed in a large packing case, the case being one foot larger each way than the hives, the hives being placed six inches apart in the case, with six inches of cut straw on the bottom of the case for the hives to rest upon. The 6-inch space between the hives was packed with cut straw, also the one-foot space all around and on top of the hives. The entrance of two of the hives faced each that of the other, and two hives faced west. The entrance to the hives was kept clear of snow all winter to insure free ventilation. No sound could be heard from these colonies all winter.

On March 22 the bees made their appearance, when many were flying briskly going out and returning. From March 22 to April 22 the bees had but one good flight. On April 22 they were then examined. Very few dead bees were found on the bottom-boards; the combs were dry and clean and no sign of dysentery. They were then removed from the packing case and placed on the summer stands. The average weight of the hives when the bees were put into winter quarters was 62½ lbs.; when put on the summer stands, 49¼ lbs., showing that each hive had lost 13 pounds and 4 ounces. The weather at this date being bright and warm the bees built up rapidly and were in excellent condition for the honey flow.

This experiment was tried in a well-sheltered corner where no cold winds could get at the hives.

SAINFOIN.

This clover has again attracted much attention on the Central Experiment Farm, both as a fodder-plant and also as a honey-producer. Sainfain sown in May, 1903, came in bloom on Aug. 15, of the same year, was cut for hay on Aug. 28, and gave a yield per acre of one ton and 760 pounds of cured hay.

The autumn growth was allowed to remain as a cover for protection to the roots over winter. The summer of 1904 growth strong and even; height averaged 23 inch; came in bloom May 31, and lasted up to June 20, when the plot was cut for hay. These dates might have been extended had the plants been grown merely for honey; but as they were at that time in the best condition for hay they were cut for that purpose.

The yield of the first cutting was 2 tons 840 pounds of cured hay per acre. The seceond bloom was on July 30, and lasted until Aug. 15, when it was again cut for hay, giving one ton and 837 pounds of cured hay per acre, or a total yield for the year of 3 tons and 1,677 pounds per acre.

INTRODUCING QUEENS.

Eight queens were introduced during the season, four on the Benton plan and four with frames of brood taken from several hives. All queens belonging to the colonies that were to receive the imported queens were removed 24 hours before introducing the new queens.

Benton Introducing Cage Method.—The Benton mailing and introducing cage is ordinarily used over the country. This consists of an oblong block of wood with three holes bored nearly through, one of the end-holes being filled with "Good candy, and the other two being left for the occupancy of the bees and queen. On the back of the cover are printed the directions for introducing, and at each end of the cage is a small hole bored through horizontally, but which in the mails is stopped by a cork. One hole is for the admission of the bees and queen preparatory to mailing, and the other for the liberation of the queen, by the bees eating out the candy in the course of 20 to 30 hours, thus releasing her automatically. When the cage is received, the cork covering the candy is to be removed, as well as the wooden cover over the wire-cloth. The cage is then placed on top of the frames, care being taken to place the wire-cloth over the space between two frames in the center of the brood-nest. The queen is then released by the bees in the manner explained.

I would advise all to have extra cages for introducing so that no disease may be brought in with the queen. See that the cage you introduce with is thoroughly cleaned, and have fresh food in readiness made from your own honey placed in the cage. Then remove the queen and bees from the cage they were received into the one prepared for them and follow directions above.

How to Make Honey and Sugar Thick for Feeding.—Take good, thick honey and heat (not boil) it until becomes very thin, and then stir it into pulverized sugar. After stirring in all the sugar the honey will absorb, take it out of the utensil in which it is mixed, and thoroughly knead it with the hands. The kneading will make it more pliable, and soft, so that it will absorb or take up more sugar. For summer use it should be worked, mixing in a little more sugar until the dough is so stiff as not to work readily, and it should then be allowed to stand for a day or two; and if still so soft as to run, a little more suger should be kneaded in. A good deal will depend upon the season of the year—there should be more sugar in proportion to the honey in warm weather than in cool weather.

ANOTHER METHOD OF INTRODUCING QUEENS.

Select a strong colony, remove the wooden cover, and place a fine wire netting over the tops of the brood frames to prevent passage from one hive to the other; place on top of this wire-cloth a brood-chamber with 4 frames of well-sealed brood, selected from different hives, with young bees just hatching out, but with no unsealed brood. Put the queen in this and close the hive bee-tight, and keep it over the strong colony four or five days. By that time a respectable force of young workers will be present, and the hive may be placed on the stand where it is to remain and the entrance to be made large enough for only one bee to pass at a time. As a matter of precaution against robbing, the entrance may be opened as the colony gets stronger. This later plan has never failed with me. JOHN FIXTER.

DIRECTOR'S REPORT.

The year just past has been a very peculiar one for the bee-keepers of this Province, and of the northern and eastern portion of the United States as well, in that there was an almost unprecedented loss among bees. This fact, coupled with the rather poor honey season, has resulted in a very small crop of honey. We have the satisfaction, however, to report that the quality of the crop secured has been up to the average.

The sum of $200 was set apart for the affiliated societies. This was expended in accordance with the by-laws. There was no money granted to the different agricultural societies during the year, but we have added $50 of the funds of the Association to the special grant from the Government for the prizes and other expenses of the Fruit, Flower and Honey Show. The Canadian Bee Journal has been sent to each member of the Association, as usual. As you will see by the reports of the different officers we are able to report that our finances are in a healthy condition, notwithstanding our extra expenses during the year.

THE DIRECTORS.

The election of officers resulted as follows: President,

H. G. Sibbald; First Vice-President, R. H. Smith; Second Vice-President, F. J. Miller; Secretary, W. Couse, of Streetsville; Treasurer, M. Emigh; Auditors, J. L. Byer and Jos. Thompson; Inspector of apiaries, Wm. McEvoy, of Woodburn; Assistant Inspector, F. A. Gemmill; Committee to revise report, H. G. Sibbald and Morley Pettit; Committee on transportation, H. G. Sibbald, R. F. Holtermann and Wm. Couse.

As the next place of meeting, Toronto was chosen.

Report of the Vermont Convention.

BY W. G. LARRABEE.

The 13th annual meeting of the Vermont Bee-Keepers' Association was held in Middlebury, Jan. 12, 1905.

The meeting was called to order at 10 a. m. by Pres. Cram. Reports of secretary and treasurer were read and adopted, and Pres. Cram appointed the following committees:

RESOLUTIONS—J. E. Crane, H. L. Leonard, and Mrs. C. M. Rice.

NOMINATIONS—V. V. Blackmer, G. C. Spencer, and P. E. Crane.

Then followed a discussion led by J. E. Crane on the benefits derived by bees fertilizing flowers of all kinds, which was participated in by others.

G. C. Spencer then gave a talk on how to produce honey free from travel-stain. He thought travel-stain was caused more by using old combs than any other way. Mr. Crane prevented travel-stain by using a honey-board with entrances to the supers only on the sides and ends of the hive.

W. G. Larrabee then spoke on the production of comb versus extracted honey, as did many others. This discussion brought out the fact that honey would not be poisoned by being stored in galvanized-iron tanks.

The question box was opened by V. V. Blackmer, and several questions asked and answered. One was, "Is it any advantage to give bees water in the spring before they are able to fly?" Answer, no.

It was then voted that the 3rd article of the Constitution be amended so as to make the annual dues 25 cents instead of 50 cents.

Reports of committees and election of officers was the first on the programme at the afternoon session. The nominating committee nominated the old board of officers, and they were duly elected, as follows:

President, M. F. Cram; Vice-Presidents, for Addison Co., G. C. Spencer; for Orange, C. B. Fisk; Lamoile, E. K. Savery; Chittenden, C. M. Rice; and Rutland, V. N. Forbes. Secretary, W. G. Larrabee of Shoreham; Treasurer, H. L. Leonard.

Mr. Leonard then read a paper on the sources of sweets of the country, in which he gave the sources of Vermont honey as follows, in this order from spring to fall: Poplar, willow, soft maple, rock maple, horse plums or wild plums, apple and fruit blossoms, dandelions, raspberry, clover (including alfalfa), basswood or linden, buckwheat, smartweed and goldenrod.

Mr. Leonard also read an article from Gleanings, on how to tell if there will be a honey-flow next year. Others spoke on the causes of flowers secreting or not secreting honey. Mr. Crane said that a thunderstorm would reduce the flow of honey even if it did not come nearer than 30 miles. Prof. Seeley said that if red clover could be produced with a tube half the length of the present one, the amount of honey and clover seed would be increased millions of dollars.

Mr. Forbes being absent, others spoke on his subject, "Labor-saving conveniences in the bee-yard and honey-house." Mr. Holmes advocated the use of bee-escapes in taking off comb honey. He also spoke on the causes of the heavy winter loss in 1904. He thought the long, severe winter, combined with other things, was the cause. Mr. Cram thought the heavy winter loss was not caused by the severe winter, or by the honey the bees had to consume, but by the condition of the bees themselves, and said the advantages of cellar-wintering were 10 pounds less honey to the colony, less labor to put in the cellar than to pack out-of-doors, less spring dwindling, and more perfect wintering.

Mr. Crane said the advantages of outdoor wintering were the opportunity to have a flight in winter, better spring protection, and earlier brood in spring.

G. W. Fassett then spoke on controlling increase.

The question-box was opened again, and this brought out a talk about the gypsy or brown-tailed moth, and it was thought it was not liable to be injurious to the bees or their forage. It was also stated that more alsike clover seed was sold by the dealers than either the red or mammoth varieties.

The question, "Will it pay to feed bees in the spring to induce brood-rearing?" was answered by Mr. Blackmer, yes; by others, no.

"Do bees gather more honey from white than alsike clover?" The general opinion seemed to be that more was gathered from alsike than from the white.

It was voted that the Executive Committee fix the time and place of the next meeting.

The treasurer's report showed a balance of $10.55.

The Committee on Resolutions submitted the following:

Resolved, That a vote of thanks be extended to the proprietor of the Addison House for favors shown.

Resolved, That a vote of thanks be extended to the Rutland Railroad Company for reduced rates.

This meeting was very interesting and profitable, and was quite well attended. W. G. LARRABEE, *Sec.*

Doctor Miller's Question Box

Send Questions either to the office of the American Bee Journal, or to Dr. C. C. MILLER, Marengo, Ill.

Bees Storing Water-Melon Juice.

My bees had access to a great many water-melons last fall, and I think they stored considerable of the juice. They now have dysentery.

1. Would the use of the melon-juice cause dysentery?
2. Can I do anything for them before warm weather?

OHIO.

ANSWERS.—1. Most likely.

2. A flight is their hope. Most likely there will very shortly be a day warm enough for it. If in the cellar, take them out the first day they will fly, and if it is still, and the sun shining, you will find they will fly at 45° in the shade—possibly at 40 degrees by your thermometer, for thermometers vary. Then put them back in the cellar the same day or the next.

Putting Bees Out Early—Largest Average Yield—Prevention of Swarming.

1. I often see it stated that bees should not be brought out of the cellar too early in the spring. In what way would it be any more injurious to them to do so than to the ones that are out all winter?

2. What is the largest authentically-recorded yield of honey from one colony of bees in one day, and also for one season?

3. How was the colony manipulated in the above instance?

4. Would it be too personal a question to ask what your average and also your largest (colony) yield was for 1904?

5. When you secured 300 pounds of comb honey from one colony how did you manipulate it, and how long was the flow on, or, rather, how many days were the bees engaged in gathering it? Was it all from one hive, or from one colony and its increase?

6. On page 186 of "Forty Years Among the Bees" is a plan to prevent swarming, called the "foundation plan." On page 188 you say that the plan worked well for the first two years, but not so well in 1902. Would you mind stating how it worked during the seasons of 1903 and 1904?

7. I keep from 10 to 15 colonies, but never get much honey—from less than nothing to about 30 pounds. I have the records of my wonderful "manipulations" of some of the colonies from June 1, 1903, to the present date. I would be pleased to send some of them to you if you think they might be of benefit as a warning how *not* to do it, and to show me when I made blunders. PENNSYLVANIA.

ANSWERS.—1. I don't know that I can give an entirely satisfactory answer. Experience has shown that bees taken

out of the cell in February or March, before flying weather has come to stay, do not do as well as when brought out later, unless they are taken back immediately after taking a flight, and upon this last opinions are not yet unanimous. You want to know why a colony brought out too early isn't just as well off as if it had been out all winter. Possibly it is as well off, if protected the same way. But when brought out of the cellar there is generally no protection given such as is given to those left out all winter.

2. I can speak only from memory. I think G. M. Doolittle had 20 pounds in one day, and a Texas bee-keeper from whom nothing has been heard of late years, claimed 1,000 pounds in one season from a colony and its swarms.

3. I don't know, but I don't remember that anything was credited to special manipulation. Perhaps Mr. Doolittle will enlighten us—although I doubt that manipulation would have much to do with the gathering of one day, beyond manipulation to get the right number of bees of the right sort at the right time. But there's a big lot in that. There is just a little room for suspicion in the Texas case, with no intention to deceive, that some other swarm may have clandestinely united to swell the product of that one colony.

4. The average yield in 1904 was about 60 pounds of section honey per colony. The best colony gave 153 pounds (165 sections). It was nothing like so good a year as 1903.

5. The largest yield I ever had from one colony was not 300 pounds but 300 sections, about 279 pounds. The manipulation recorded is as follows: June 22, eggs in queen-cells destroyed; July 1, queen-cells destroyed, two frames of brood were taken away and two empty combs exchanged for them; July 9, queen-cells destroyed; Aug. 4, destroyed 1 queen-cell; April 23 the hive was opened to see if the queen was clipped (she was of the previous year); May 12 to see how the colony was doing (it then had more or less brood in 4 frames); and it was opened at least three other times to see if queen-cells were present, but none were found. I don't know how many days the bees were gathering, but I think most of the time from early in June till first week in September. The 300 sections were the yield of one colony; it had no increase. The yield might have been more if the two frames of brood had not been taken away—and it might have been less.

6. It was not used enough to tell.

7. Send 'em along. We often learn more by failures than successes.

Making Sugar Candy—Dry and Liquid Substances at Hive-Entrances.

1. On page 86 Mr. Dadant advises feeding sugar candy in the cellar. I should like to know how to make this candy, and other candies for feeding.

2. There is a whitish liquid running out of some of the hives in my cellar, and others have a dry substance like fine sawdust in front of the entrance. The hives from which the liquid comes seem to be wet and nasty inside. What is the cause of this? They have plenty of stores. IOWA.

ANSWERS.—1. Don't any of the girls or women in your neighborhood make candy? If they do, just get them to make you some plain candy. Take best granulated sugar and about one-fourth as much water, stir the sugar into the boiling water, keeping it on the stove. The greatest care must be taken not to burn it, for burnt sugar is death to bees in winter. Keep trying it, and when a little dropped in a saucer grains, take it quickly off the stove, stirring it, and pour it into dishes slightly greased.

2. The sawdust-looking material is the gnawings from the cappings and other debris, and indicates nothing wrong. The liquid is the moisture from the vapors condensing in the hive. Your cellar may be too cold, and hive-entrances hardly large enough.

Queens Reared in the South—Serradella—Making Hives—Supply Dealers' Trust.

1. Will queens reared in the South be as hardy for a northern climate?

2. Do you know anything about the honey-plant called Serradella? The seed catalogs recommend it highly.

3. Most of the long-tongued queens advertised are spoken of as leather-colored. Are not the golden Italians as long-tongued as any?

4. I have 17 colonies now, and expect to have 50 colonies this time next year. I make my own hives. On page 100 the editor rather discourages this, but I make just as good a hive as can be bought for my purpose. You gave me a pointer on those cleats on the end. That was where the hives were weak, as they would warp in wet weather.

Whatever the Editor says about it, I do think there is a trust to raise prices. If not why is foundation higher this year? Wax is the same price. INDIANA.

ANSWERS.—1. Theoretically, no; practically, yes. A strain of bees continued for a long series of years in a warm climate would hardly be expected to be as rugged as one continued for the same length of time in a severe climate; but with the constant exchange from one part to the other there is likely to be no appreciable difference. If there is any Italian blood in them, they can not have been in the South more than half a century at most, and in that time they would hardly have changed much in characteristics.

2. I have seen mention in foreign journals of serradella, or serradilla (*Ornithopus sativus*), but know nothing about it.

3. There is much variation in golden Italians, and you will probably find some with longer tongues than others, and the same with the leather-colored.

4. The Editor is without doubt correct in saying it is better to buy one's hives than to make them. That's the truth for 9 out of 10, if not 99 out of 100. If you find it is better for you to make them, you ought by all means to do so, but you're the exception to the rule.

For anything I know the price of foundation is more than it should be, but because wax is no higher it does not necessarily follow that foundation should remain the same. Part of the cost of foundation is in the labor, and labor is higher than it was. If you are so situated that you can make hives cheaper than you can buy, it is possible that you could profitably make your own foundation, either with a mill or with the Rietsche press.

Cellar Wintering—Danzenbaker Hives—Introducing Queens.

1. I have always wintered bees outdoors, our cellar being too damp for them, but I lost so many last winter that I thought I would try cellar-wintering. About two weeks before it was time to put them away for winter I moved them a quarter of a mile where I put them into a neighbor's cellar with his bees. I expect to give them a flight in three or four weeks. Should they be put in the same place I had them before I put them into the cellar?

2. When I put them out for good would it be better to close up the entrance and bring them home, putting them on the summer stands, or leave them up there for a few days and then bring them home?

3. What is the best way to get them out of the cellar? This cellar is partitioned off for the bees, making it necessary to pass through two doors and up some steps.

4. Doesn't Doolittle give his bees a midwinter flight?

5. I introduced a fine-looking select-tested Italian queen to a colony before swarming, following the rules on the card attached to the cage. About a week later I overhauled the hives to find the queen doing fine work, but there were several capped queen-cells, which I destroyed. About a week later I noticed a number of bees in front of the entrance to that hive, and upon investigating I found the queen dead among them. I found a hatched queen-cell in the hive, and other capped queen-cells. I let them alone, expecting them to swarm, but they did not. In another week I again examined the hive and found the other cells all cut out, but this queen not yet fertilized. After that I looked several times for the queen, but could not find her. Nor was she fertilized. After spending hours looking for her (I gave the colony brood and eggs every now and then, but no cells were started), I tried different ways of introducing queens, but they killed every one of them. At last I put a light colony with a good queen (it being fall now) on top of this hive with a paper between them. They all went down into the hive and united nicely. But what was the matter with the colony? It meant the loss of about 50 pounds of comb honey.

6. I notice you don't think much of the Danzenbaker hive. I tried a few of them last summer, and I like them very well. I think I will get all of that kind. What is it that you don't like about them? Is it the changing from one hive to another?

7. Do you introduce all your queens now by the "drowning" plan? I haven't heard much of it lately. I had pretty

good luck by daubing the queen with honey, the bees accepting the queen nearly every time I used the plan.

I would like to have you visit me next summer. I am sure you would enjoy it. MICHIGAN.

ANSWERS.—1. It will probably make very little difference. If they flew very little during that two weeks after being moved, it may make no difference. If they flew much, some of the bees will be likely to want to go to their old stands. Even that will not be likely to do any harm, for they will be kindly received, and what are lost to one colony will be gained by the other.

2. Set them out and let them have a flight; then bring them home as soon as convenient afterward.

3. There are steps to my cellar, and a man just picks them up and carries them out.

4. I don't think he does. Not many do, and one of the things now under discussion is whether it is best or not.

5. Hard to tell. It is possible that the young queen was still present, up to the time of uniting the two colonies, and while they would accept no queen alone, they preferred the laying queen when it came with another colony.

6. The difficulty of changing is not the reason I don't use the Danzenbaker hive. If I were now using Danzenbaker hives entirely, I think I would be to the expense of changing to the dovetailed. The difficulty of handling closed-end frames without killing bees, is a serious objection, but I might stand that rather than to buy all new hives. A more serious objection is that ten times—yes, I think a hundred times, as much pollen is carried into sections as with the dovetailed. The closed-end frames must be warmer, I think, for winter, and if you can handle Danzenbaker frames as easily as Miller frames, especially as they grow older, and if you have no trouble with pollen in sections, the Danzenbaker may be a good thing for you. The manufacturers are good friends of mine, but I can not believe they are doing a good thing for bee-keepers by praising the Danzenbaker hive so highly.

7. I don't drown them, although I said I did. That was because I was not sufficiently acquainted with the English language. I only hold them under water for a short time, although sometimes till they appear entirely dead. I used that method last year with a good many, and it's safer than putting in an uncaged queen without the wetting, but in many cases not so safe as caging.

I thank you for your kind invitation, but can hardly accept.

Cutting Foundation—Placing Hives in the Cellar—Increase and Rearing Queens.

I took advantage of the club offer when renewing my subscription to the American Bee Journal to also obtain a copy of "Forty Years Among the Bees," which I have read, and like very much. Being of the number classed as *bee-owners* (I fear), having 9 colonies in the house-cellar with which I have had about 5 years' experience (the number of colonies varying from 3 to 15), I will take the liberty to comment upon some parts of the valuable book:

1. As per directions for cutting foundation (pages 142-144), would not the board mentioned, with its guides, work much better if those guides for cutting were each made of two separate pieces with just space enough between them to allow of the free passage of a 2-inch roller knife, which could be dipped into heated water between cuts? The space for the passage of said knife being 3¼ inches, 6½ inches, etc., upon the guide frame; strips ⅝-inch wide being used between spaces for cutting the ⅝-inch bottom starters. The knife is made of a thin steel disk, having a small hole in its center, through which a rivet holding the crotched handle passes.

2. In Fig. 109, page 301, I found a free advertisement in favor of Montgomery Ward & Co., for which I hope you received a nice donation. If you have not you *should*.

3. In placing the hives in the cellar I think it a very good plan to have the hive-bodies pitch forward to such an an extent that any moisture that may condense on the covers will run to the end of the hive instead of dripping on the cluster, as it would if the hive stood level.

4. Do you think it would be profitable for me to increase by the method mentioned by you on page 260?

5. Would the field force of No. 4, as in plan given page 260, rear a good queen from young brood if I did not have a queen or cell to give them, when the made colony is placed where No. 4 was, No. 4 removed to a new stand, as per second part of plan given? I am interested in farming as well as bee-keeping, so when the bees need the most attention the farm requires most of my time, hence one of them must suffer. NEW YORK.

ANSWERS.—1. Not having tried it, I cannot say how it would work.

2. I made the mistake of not contracting beforehand that I was to receive a stipulated amount if that box should be allowed in the picture. I'll know better next time.

3. I'm a little surprised to find that the hives don't pitch forward in the book. They do in the cellar. Wait a minute, and I'll go down cellar and see how much * * * I find the hive at the back end is from 1 to 2 inches higher than at the front. I'm not sure there's any great advantage in it. Certainly the slant is not enough to make the drip run to the front. Wouldn't it need 6 inches or more for that? and so much slant would hardly be desirable. Besides, I doubt that water often settles on the cover in my cellar.

4. It's largely a matter of convenience. If convenient for you to use the plan, I think you'll like it and find it successful.

5. No, or at least I wouldn't be satisfied with queens reared in that way. So much depends upon the queen that the best is none too good. You would be trusting to field-bees to start cells, and nurse-bees are the right ones for that purpose. If you want the bees to rear their own queen, you might combine the two ways; first set your brood over No. 4 over an excluder for an hour or so, and then set in place of No. 4, and you would have young bees enough. But there might, in that case, be some danger of swarming at the maturing of the first young queen.

Streaks and Scum in Granulated Honey.

Last fall, when extracted honey in tanks began to granulate, I run some into paper oyster pails. When it became thoroughly candied in the paper pails, it had a white scum-like gum on top, and also white streaks running irregularly through the honey, so that it had a mottled appearance, when cut through. When winter set in I melted some of the same honey in the tanks, and run it into paper pails. When the honey in these latter pails were fully candied again it was all one solid color—no streaks running through it, and no light shades on top or on the sides.

How can I prevent these light streaks and scum-like coverings, without re-melting before running into the paper pails?

What would be the effect of running into the paper pails as soon as the honey is cleansed, after extracting?

MICHIGAN.

ANSWER.—I cannot speak with authority, but I'll say how it looks to me, and if I am astray I hope some of the good brethren with experience will straighten me out. I suspect that the streaked effect might be caused by different kinds of honey settling in different strata in the tank. It might also be caused by air-bubbles being caught in the partly-granulated honey. When the honey was melted, the air-bubbles could escape. It is quite possible that if the honey was run directly into the pails as soon as cleared it would be all right.

Winter Hive-Entrance—Afterswarms—Alsike Clover—Piping of Queen—Alley Traps.

1. I winter my bees on the summer stands, having them in winter-cases with inch and a half sawdust between walls of the winter-cases and the hives. I allow an entrance of only 2 inches by ¾. Is this too small?

2. As to afterswarms, I have all queens clipped; hive the swarm on the parent colony's stand, removing the parent colony to a distance. Parent colony still insists on sending out an afterswarm. Would it be better to destroy all queen-cells in the parent colony as soon as the young queen is heard piping, so as to be certain of allowing *no* afterswarm?

3. Can virgin or unfertile queens pass through queen excluding zinc?

4. Would 70 or 80 acres of alsike clover planted on the farm where the apiary of 50 colonies is located make any *appreciable increase* in the average of surplus honey stored by the bees?

5. What should I consider a fair *yearly* average for 50 colonies in this State?

6. Colony A swarms. Will a young queen be *always* heard piping in about 7 days thereafter?

(a) Will a colony ever swarm without the young queen's piping being heard 7 days after?

(b) Will a colony that has swarmed once send out an afterswarm if the young queen is not heard piping in 7 days?

(c) Finally, is a young queen's piping a certain sign of the intention of the colony's sending out an afterswarm, and the *not* hearing her piping a sure sign that no afterswarm is to be sent out?

7. What is the use or purpose of the bee-space now put behind the Alley queen and drone trap? Is it not just as good, for all practical purposes, without such bee-space?

VIRGINIA.

ANSWERS.—1. It is probably large enough, although I don't know how cold it is with you. If your bees are located so that there is no chance for cold wind to blow into the entrance, it is possible that a larger entrance might be better.

2. Destroying all cells after queen is heard piping ought to make a sure thing of it, unless it might be possible you had waited till the bees were just on the point of swarming when you cut out the cells, and would swarm without finding out that no cells were left. I don't know whether such a thing could happen or not. But hold on; 'fess up, now, didn't you move the old hive to a new location at the time of hiving the prime swarm? If you did, no wonder you had a second swarm. That's not the way. Hive the prime swarm on the old stand, and put the old hive close beside it; then move the old hive to a new stand a week later. You see, if you move the old hive to a new stand right away, so many young bees will hatch out by the time the young queen emerges that the colony will be strong enough to swarm. But if you put it close beside the old stand, and then move it a week later, all the field-bees will, on their return from the field, go to the old stand and join the swarm. That will greatly weaken the stump, or mother colony, and it will hardly feel it can afford to send out another swarm. Still further, the field-bees going to the old stand, there will be no honey coming in from the field, making them think, "Well, as the honey-flow has stopped entirely, we most certainly would starve if we should attempt to set up housekeeping in an empty hive; so let's not swarm."

3. A laying queen looks much larger than a virgin, but it's the abdomen that's larger not the thorax. It's not the abdomen, but the thorax that prevents a queen going through the zinc, and I think the thorax of a laying queen is no larger than it was when she was a virgin; so she ought to go through no more easily one time than another. But a virgin queen probably makes a more vigorous effort to go through, so she might go through an aperture through which she would not force herself after she settled down as a laying queen.

4. That depends. If the bees had all they could do on basswood or some other heavy yielder, the alsike would make no appreciable difference. If they had nothing or very little else, the alsike would make not only an appreciable, but a very big difference. I should suppose 80 acres would give 50 colonies more than they could possibly do.

5. I don't know. Possibly 1,500 pounds.

6. I wouldn't like to be too positive about it, but I think the young queen always pipes before she is many hours out of the cell; usually about eight days after the issuing of the prime swarm, although it may be 2 or 3 days sooner than that time, and possibly several days later.

(a) If you mean a second swarm, I think the queen will always pipe before swarming, perhaps not often as soon as 7 days.

(b) I don't believe it will send out an afterswarm till after the piping; but, as before intimated, the 7 days is not right.

(c) Please allow me to answer the spirit rather than the letter of your question. You may rely with much confidence upon the noises made by young queens in deciding whether an afterswarm will issue or not. Eight days after a prime swarm has issued, place your ear against the side of the hive in the evening when all is still, and if swarming is planned for the next day you will hear a young queen piping and one or several yet in their cells quahking. The quahking is not so shrill as the piping, and seems more hurried. If you hear *both* the piping and quahking you may confidently expect an afterswarm, generally as soon as the next day. If you do not hear it, you may as confidently say, "No swarming to-morrow." In most cases you may settle it one way or the other by listening that one evening. But, as before intimated, there may be a variation in time. If the weather has been wet and cold, the prime swarm may have been delayed in its time of issuing, making the time till the issuing of the second swarm just that much less. Or, the time may be longer, and it may be worth while to listen on the evening of the 9th day or later. But you needn't listen any later than the evening of the 15th day. As said before, I think the young queen pipes in all cases, swarm or no swarm, but there must be both piping and quahking to make you expect a swarm, and if there is to be no swarm the piping will be neither so loud nor so long continued, and you will not likely hear it at all.

7. I don't know. I haven't seen traps made very lately. Perhaps Mr. Alley will tell us.

Bees Under the Snow—Feeding Bees—Candied Sections.

1. My colonies are buried under the snow. Will they smother? I have planer shavings on top to let the air through.

2. What is the best way to make candy for bees, and how would you feed it?

3. Which is the best feeder to use in feeding either honey or sugar syrup, so that the bees will not be disturbed very much?

4. I have some honey that is a little sour. Will it injure the bees if I feed it to them in the spring?

5. I have some sections filled with candied honey. Would it be well to melt them, feeding the honey to the bees and saving the wax?

WISCONSIN.

ANSWERS.—1. Enough air works in through the snow so there's no danger of smothering. But look out not to let the entrance become filled with damp snow and then freeze solid.

2. Just the same as your women-folks make it. Stir the sugar into a very little water in a vessel on the stove, and when a little dropped into cold water is brittle it is done. Lay the cake of candy over the frames and cover up warm.

3. The Miller feeder, the Doolittle frame feeder, or the Boardman entrance feeder can be used with very little disturbance.

4. Not after they are flying every day or so.

5. There is probably no better way. The honey will also be good for table use.

Contributed Special Articles

Producing Comb Honey With and Without Separators.

BY M. A. GILL.

I see the question, "Can marketable honey be produced without separators?" has been passed upon by the Board of experts, on page 20. When I look over the list of names and see the decided opinions where the answer is "No," I am reminded of the case where a prisoner in jail had sent for his attorney who, after viewing the case, said, "Why, they can't put you in jail!" Whereupon his client answered, "But I am in here!"

Is it possible that these experts are not aware of the tons upon tons, and carload after carload of honey that goes to market every year that has never seen a separator? Is it possible, too, that they are not aware that there are a number of markets that prefer this kind of honey to the most perfect separatored honey that was ever produced? Why is this so? It is because honey is sold by weight there instead of upon its merits.

Not all markets are alike, however, as some jobbers prefer, and their market demands and appreciates, a nice, straight article, weighing from 21 to 22 pounds per case of 24 sections, which is all that a carload can possibly weigh, as an average, where the honey is produced with a full set of separators.

When sections were first invented they were made intending to hold one pound of honey, and they met the requirement very well, weighing from 15 to 17 ounces. Soon after separators were adopted, using the same sections, cutting off one-half of a bee-space, the weight dropped to from 14 to 16 ounces, much to the detriment of nice, straight sepa-

ratored honey, when sold in markets where they care nothing for quality but are stricter on the matter of weight.

I have in mind a carload of honey that went east within the past three years, to a large wholesale dealer and jobber. In the car were a few hundred cases of almost perfect honey, fit for exhibition purposes, and weighing from 21 to 22 pounds net, average per case. The balance of the car was made up of unseparatored honey, many sections being so bulged and pussy that they would vary from 12 to 20 ounces, but, as a whole, would weigh from 22 to 25 pounds net, per case; but it was almost impossible to take a section from the case without breaking the cappings.

When loading the car I thought how I wish it was *all* like the first, then I knew my fastidious buyer would be pleased. But imagine my chagrin when the buyer drew on me for damage on the first-mentioned honey, and has never ceased to sing the praises of the bulged and pussy stuff, saying it brought him from 25 to 50 cents per case more than the "light honey," as he called it. This honey was sold to the jobber by the case.

Now, most writers, and some editors, teach that he did right—that comb honey should *always* be sold by weight, claiming their conscience bothers them if they know a customer gets an ounce more or less than actual weight. Right here I want to plead guilty that my conscience is not so tender, and that I believe in paying a premium for quality. Hence I buy my oatmeal by the package, and my pills for their quality instead of how many there are in a box.

And if I have two cases of honey, one weighing 22 pounds net, and it is perfect, and the sections can be handled like a child's toy blocks; and another weighing 25 pounds net, but is bulged and cannot be handled without causing it to leak, I claim that right to offset quantity with quality.

And if you are not going to allow us this privilege, won't you please have the manufacturers make a little difference in the size of the sections so that each will have a fair chance?

Tell the board of experts, who say marketable honey cannot be produced without separators, *that it is* produced and sold by the carload, and even preferred (in some markets) to the finest separatored honey they can show up.

These conditions will exist so long as both use the same size section-box, and so long as honey is doled out by the ounce and no premium paid for quality.

We can only deal with these conditions as they exist, and the facts are simply this, that there are 24 (so-called) one-pound sections in a case, and people have been taught to expect (approximately) 24 pounds of honey. Without separators, they can get it, but with separators 22 pounds net is a high standard of excellence for a carload of 30,000 pounds of No. 1, and 20 pounds net for No. 2.

Then why not adopt a universal standard of weight and excellence? It would surely increase the sale of honey, because dealers would push the sale of it.

I have known many dealers (retailers) who abandoned the handling of comb honey, because of its mussiness, for it would daub up the counter and everything near it. Still, it had the one merit of being heavy honey. Juggle with these conditions as much as you please, and the fact will remain that 22 pounds of nice, separatored honey is truly worth more than 24 pounds, or even 25 pounds, of bulged and leaky stuff—and yet the "stuff" brings the most money.

For years I have been producing both kinds, and carefully watching the market demands, and I must confess I hardly know now which to adopt, whether to use all separators and produce the lighter but more fancy honey, or throw away all separators and produce all heavy honey.

I find the extreme East and Northern markets prefer quality to quantity, while the more Southern and Western markets prefer quantity to quality. I have come to these conclusions after handling from two to five carloads per year for the past five years. Boulder Co., Colo.

Species and Races of the Honey-Bee—Other Matters.

BY PROF. A. J. COOK.

One of our most prolific writers, in scientific entomology, is Dr. William H. Ashmead, of the United States National Museum. He has been one of the leaders in systematic work in the Order (Hymenoptera) which includes our bees. This gives his opinion great weight in this Order, and so we are greatly interested in his revision of the genus of the honey-bee. In Volume 6, No. 2, of the Procedings of the Washington Entomological Society, published in May, 1904, he gives his views of this group, which must interest all who care for bees or give study to these interesting insects.

Dr. Ashmead divides the old Linnæan genus Apis into 2 genera: Apis and Megapis. This latter is a new genus, and is appropriately named, as the prefix means "large." The form and position of the eyes and ocelli and the wing structure, give warrant to this change, in the opinion of Dr. Ashmead. On page 46 of the latest edition of my Bee-Keeper's Guide, (1904 edition), the reader will find the species and races described.

Two species are included in this newly-founded genus. One is the much discussed "dorsata," which we will now know as "Megapis dorsata," instead of "Apis dorsata," the name which we have used to designate it in the past. This species is found on the islands off Asia from Ceylon, where, as we know, Mr. Benton found it, to our own lately acquired possessions, the Philippines. The bees are very large, black, with yellow bands crossing the abdomen. In some cases nearly the entire abdomen is said to be orange-yellow. The other is Megapis zonata, also found in the Philippines, and in some other islands. These are blacker than are the others, but not as large. The first two segments of the abdomen are lined with whitish.

In the genus Apis, Mr. Ashmead places Apis mellifera, which, as we know, has been carried to all parts of the world. I suppose it originated in Asia; Apis cerana, of China and Japan; Apis nigrocincta of China, Malay Peninsula, the Philippines and India; Apis Indica, of India; Apis nigritarum, of Africa; Apis unicolor of Madagascar, and Apis florea of India. Dr. Ashmead suggests that the last should really be separated, and though while he gives it as belonging to the genus Apis, he suggests that it be removed to a new genus and suggests the very appropriate name of Micrapis. While the changing of names and the undue increase of names in describing and writing of plants and animals, is not to be encouraged, yet I believe that these changes of Dr. Ashmead are warranted, and that we may well use these new names in our future references.

GOVERNMENT AID TO APICULTURE.

I read with much interest Mr. Benton's address at the St. Louis Convention. I think it was correct for the most part, though in one or two points I know the truth to be a little different. The Late Dr. Edwin Willets thought that the Department of Agriculture should do more for bee-keepers. As Assistant Secretary of Agriculture, he sent Dr. Riley to visit me to confer as to aid that might be given. I suggested that experiments in growing honey-plants exclusively for honey, and the importing of foreign bees, were hopeful lines for research. I also urged strongly that Mr. Benton be secured to do the latter. I urged that his experience would specially fit him for this work. He was then in Europe and I suggested that the work could be cheaply done. There was an attempt to carry out both of these suggestions. Mr. Benton was engaged, but Dr. Willets wrote me they found that they could not send a man abroad. Lately a more wise and liberal construction, or better laws have been framed, so that now we have men sent to all parts of the world to get better plants and animals, if they are to be found.

I stated that I did not believe that it would pay to plant especially for honey, but that much of it was being done, and that careful experimentation could alone determine. It would pay to settle the matter once for all. I commenced the work, carefully prosecuted it on an extensive scale, and I think settled the matter, thus doing what was proposed. This work was carried on by me aside from my regular college work which was severe besides, and was done by me entirely as a labor of love, as I never received one cent for doing it. I found I was unable to do more, and thus refused further work.

APIARIAN EXPERIMENTS NEEDED.

I am glad that the Department has concluded to take up the work again. Surely the matter of bee-keeping is important enough more than to warrant research along lines that can not well be carried on by the practical man. I believe the two lines that should receive attention are these: Importation of new races and species, and the improvement of those that we have; and the study and prevention of diseases that destroy our bees. The first promises much. We have made wonderful advance in improving other races of our domesticated animals, and our plants as well. It is said that the corn has been bred up in Illinois so as to make it produce ten more bushels to the acre. Who knows but what our

bees could be improved so as to produce ten more pounds to the colony? Surely a Burbank hold of this matter might give us results that would startle the world. I certainly am in favor of the utmost along these lines, and believe that we all ought to work to have the very best research carried on to a finish.

A VERY HOPEFUL OUTLOOK IN CALIFORNIA.

It is unncessary to say that the matter of rain in Southern California is all-important. With it we have great crops, and phenomenal production of honey. We have been having great rains, not only timely, but they have come so slowly that every drop has been saved to the soil. We now have about eleven inches—as much as we had in all the season last year. At this time last year we had less than one inch. Thus we see that our prospects for this season are very flattering. We shall be very sure of not only a good crop of honey, but we shall probably have a very prosperous year all along the line. In all the eleven years of my sojourn here, we have never had so bright an outlook as we have to-day.

HONEY PRODUCT FOR CALIFORNIA.

Mr. C. O. Wilder, of Vermont, asks, "What would be the money value of the honey from 50 colonies of bees in San Diego Co., Calif., and in what seasons in that section are the bees active, and when idle?" I think we can count on an average of 75 pounds per colony. Some years the yield is very much more, but in others, like the one just past, the bees get no honey at all. It all depends on the rainfall. This winter we are getting fine rains, and the bee-keepers may rejoice in the glad prospect of a maximum crop the coming season. April, May and June are the honey months of Southern California, though the bees may gather in every month of the year.

MORE INFORMATION ABOUT CALIFORNIA.

Mr. F. P. Briggs, of Massachusetts, "Missouri," and several others, ask for more information concerning California. Work here is begging for good workers. I do not believe that such need fear. Pay is better for orchard work than in the East. I do not think the cost of living here is more than in the East. I find it as cheap to live here as it was at Lansing, Mich. Chickens do well here, and there is no danger of overdoing this work. The Chinese raise the most of the vegetables, but I pity an American that would suffer from such competition. The schools are of the very best. Here, as elsewhere, all depends upon the man. The good man finds work, and success; the indifferent one lags in both.

HONEY OR SUGAR SYRUP FOR BEES.

Mr. O. A. Stewart, of this State, asks if sugar syrup is a good and sufficient food for bees. Yes, it is certainly as good as honey. Of course neither is enough. The bees, when breeding, must have proteids, which they do not get in either honey or sugar syrup. This is furnished by the bee-bread or pollen. There is a trace of this in the honey, but practically none—none to speak of. We have proved it over and over that sugar syrup is very excellent for a winter food for bees. Mr. Heddon used to argue that it was better than honey, as it was entirely free from proteids, and so bees could not breed and were better with the less activity. I should fear neither good honey nor good sugar syrup.

Los Angeles Co., Calif., Feb. 8.

The Average Length of Bee-Life.

BY G. M. DOOLITTLE.

Picking up a mislaid letter, bearing the date of September 3, 1904, I find the following in it:

"About the 20th of last June I made a colony of bees by setting the combs and most of the bees that were on them, out from the old hive into a new one, leaving one comb containing brood in the old hive, and filling it out with empty combs. The bees seemed to work well from both hives. July 10th I was called from home, and did not return till August 22. On my return I went out to see the bees. I found those in the new hive all right; but those in the old hive were nearly all gone, only about 100 or 200 being left. What do you think was the trouble? Why did these bees leave the hive, while the others staid all right? Please answer through the columns of the American Bee Journal."

This letter should have been answered sooner, but got covered up with other matter in the rush of work which is generally at its height during the time of getting honey ready for market. I have answered the letter to-day, privately, telling why the delay; but in thinking the matter over I have concluded to say a few words further regarding it, as it seems that there is much ignorance along the line of the length of life of bees, from the many letters I get which show a lack of knowledge regarding their average life; and this life has much to do with the successful making of swarms, or increase of colonies by any of the plans made known, outside of natural swarming. And with natural swarming, it is well to be fully posted in this matter, else we may lose the old colony by its failing to rear a queen from the queen-cells left, from some cause or other.

It seems strange to me that any one should be ignorant on this subject when one experiment will tell the truth in the matter, and convince the most skeptical that the average life of the worker-bee is about 45 days during the working season. Take a colony of black or German bees, for instance, and about June 10 take the queen away and introduce an Italian queen, keeping record of the date on which the change is made. In 21 days the last black bee will have emerged from its cell; and if the Italian queen went to laying immediately, the first Italian bee will have made its appearance, which fact should be jotted down also.

At the end of 45 days from the time the last black bee came out of its cell, no black bees will be found in that colony. At 40 days many will be seen, but they grow less and less each day, so that on the 44th day it will be very few indeed that will be left. From this, the questioner and the reader will see why there were only a few bees in the hive of the questioner when he returned home, if we take it for granted (which was undoubtedly the fact) that the bees in the old hive failed to get a laying queen from the frame of brood which was left with them. Having thus failed, the last bee in this frame of brood would have emerged 21 days later, or on July 11, and 45 days from that time would have been August 25, so that there would have been only three days of the bees from that frame of brood left, on the return of the questioner. And if there were from 100 to 200 bees left on August 22, they certainly held out well.

This length of life of the bees of which we have just been talking about is for the summer months, and does not apply at all for those of the fall, winter or spring. The life of the bee seems to depend on the work it does, or on its activity. Thus when it labors the most, its life is the shortest. Hence it comes about that, through the inactivity brought on by the advent of cool and cold weather, the individual bee can live from six to eight months. This is proven by changing the queen as before, only it is to be done this time about the middle of September, in this locality. Soon after the first of October the last black bee will be out of its cell; but I have often found black bees in such colonies on the first of June of the next year, and in one instance, there were a few still remaining on the first of July; but that year the bees were kept in their hives on account of bad weather very much of the time previous to this. Also, when spring opens there will be but a few Italian bees in the colony so treated, which shows that very little brood is reared from October till April, where the bees are wintered in the cellar; as well as to tell us that more bees die in two months in the spring than during five or six months of winter.

The life of the drone is regulated very largely by the workers, for they are usually driven off or killed by the workers long before they would die of old age. Any sudden cessation in the flow of honey from the fields is often sufficient reason for their being driven out to die, or the killing of them by stinging, if they are persistent in staying in the hive; so it is hard to tell just what age they might attain to, were they allowed to live to the age allotted to them, without persecution. Most apiarists think that they would live about the same length of time the workers do; but I am of the opinion that they are a little shorter-lived. It is a rare thing that any drones are allowed to stay in the hive after the honey harvest is over for the year; still, I have a few reports of drones which have wintered over, and I have known of a few doing so, and that in a colony having a fairly good queen. But the hive was crowded to its utmost with honey during the fall. Where I have tried to keep drones in a queenless colony to preserve them, they would all be gone at the end of about 40 to 42 days.

The average life of queens, as I find it in my apiaries, where a colony is allowed to stay in a normal condition, is about three years, although I have had one or two live nearly six years, and several four and a half to five years. They live also in proportion to the work they do, or, more properly speaking, in accordance with the number of eggs they lay,

as egg-laying is the only work they do. Under the present system of management the queen is often coaxed to lay as many eggs in two years as she usually would in three if in a tree or box-hive; hence most apiarists think that all queens should be replaced after the second year, with those which have just commenced to lay. However, I do not make this a practice: for I find that, as a rule, the bees will supersede their own queen when she gets to be too old to be of service to them; so I trust the matter to them, believing they are less liable to mistakes along this line than I am.

Onondaga Co., N. Y.

Rendering Old Combs Into Beeswax.

BY C. P. DADANT.

MR. DADANT:—I read in your instructions on rendering combs that they should be soaked in a tub of water before rendering. Shall we set them up straight in the tub or lay them flat? They seem to soak water best when set up.—A READER.

The old combs, such as are generally taken from very old colonies, contain more than nine-tenths dirt and cocoons. It is therefore of the greatest importance to put them in such condition that the wax will not soak into the residue, since there would be hardly enough of it fairly to moisten the dirt. That is why so many people think that there is no longer any beeswax in old combs. The only method to keep the wax from soaking into the rest when liquefied is by wetting, for beeswax will not stick to anything that is wet. So we instruct the bee-keeper to soak the combs. It matters little how they are soaked, but if they are very dry it will not take one long to find out that they are difficult and slow to soak. But if you leave these old combs in the shape given them by the bees, each of those cells, coated as it is with the cast-skin of a larva, will retain its shape and make a nice little nest for some of the liquid wax to sink into. Anyone who has rendered much beeswax and old combs has noticed occasionally a cell full of clear wax, which may be removed only by a press.

Now, our method is to break and crush these old combs out of shape, so that the cells may be closed or flattened. In this shape they will sink in water more readily. But there is a very good way to compel the combs to become soaked, and that is to put the stuff all in a coarse sack and load it down with bricks or stones at the bottom of a tub filled afterwards with water. You will notice that in a short time the water will begin to take color. When the entire lot is well soaked, it may be melted with hot water. No hard water should be used.

Here permit me to explain: Hard water contains mineral invariably, in fact, it would not be "hard" unless it did. Some of this mineral will act on the beeswax and damage it. For instance, the least amount of iron in the water will darken the wax. That is why in some localities bee-keepers seem entirely unable to produce nice, bright beeswax. If they were to use rain-water there would be no trouble.

The man who has a wax-press has no difficulty in getting out all the beeswax, or nearly all. But even he who has a press needs some direction for its proper management. It is just as necessary to soak the combs when using the press as when melting the combs and skimming the wax off the top of the water, because whatever the residue will soak will be impossible to secure, and much less will soak into the residue if it is already wet, when the wax is melted, as I said before. But those who use the press are all liable to go too fast and use too much power. If the press is filled with well-melted old combs, and kept hot, a turn now and then is all that is needed, and one hardly needs to use more power than what may be applied without effort with the hand on the screw. It is just like pressing grapes for the juice—if you try to get it out all at once you simply imprison some of the juice so that it has no means of escape; while if you give it time to slowly leak out, you will get more result with less effort.

With the man who has no wax-press, although there is more difficulty in rendering the combs, still nearly all the wax may be secured by using plenty of water and skimming the melted wax off the top of the kettle as he goes. If the worst residues are put into a sack with very coarse texture, and this is turned over and over under hot water, nearly all the wax will ooze out. Of course this wax must be rendered once more, in order to remove the remaining impurities.

Rendering combs with the solar extractor will do well for those who have but little residue, and especially for the odds and ends of the apiary, as they are gathered during the summer. When they are rendered by sun heat, they are out of the way of the moth, while the keeping of these is difficult till they are rendered, especially during the last of the summer months.

But the solar extractor is not at all fit to render old combs. The beeswax in them soaks into the cocoons, and nothing is left for the apiarist.

In rendering beeswax care should be taken not to overboil it. The mealy residue at the bottom of cakes of beeswax is nothing more nor less than water-spoiled beeswax—beeswax that has been beaten into a sort of meal by boiling water. Sometimes a bee-keeper will spoil his entire product in this ugly way. A good boil is all that is needed.

Do not use sulphuric acid in rendering wax. You will be likely to use a half-pint where ten drops would be too much, and it will give your product a sickening and bad smell.

Hancock Co., Ill.

Curiosities and Myths of Bee-Literature.

BY ARTHUR C. MILLER.

Among the curiosities of bee-literature, few strike the student more forcibly than the persistency with which many ancient myths about bees are repeated, often being stated as the results of the writer's own observations or quoted as if of recent discovery. Some are too absurd to receive serious consideration while others seem plausible until subjected to a comparison with the actual habits of the bees.

An accurate interpretation of the actions of the bees is not always possible without a knowledge of the anatomy of the bee, and, again, deductions as to the functions and mode of using various organs are not infrequently wrong, owing to lack of full knowledge of the bees' habits. Also there is often a strange confusing of cause and effect.

Such things would be of small account to practical bee-keeping were it not that many practices are based on the beliefs, and when the latter are wrong the former are faulty and costly to the bee-keeper.

The legend about the snail, which, getting into the hive, and the bees being unable to remove it and fearing the contamination of decomposing matter, hermetically sealed to the floor with propolis, is as old as bee-keeping. It reappears with every new bee-book, being cited as an example of the sagacity of the bees.

The sealing of the snail to the floor was merely the result of the effort of the bees to fill crevices which they could not enter or penetrate with their mandibles. They just as readily and thoroughly fasten a pebble in the same way.

The ramming of pollen into the cells with the bee's head as the rammer, is another myth which dies hard. The work is done with the mandibles, as may readily be seen. The bee's use of her tongue is so greatly misunderstood as almost to warrant the statement that nothing is known about it. How long and how persistently it has been asserted that a worker holding out her tongue toward another bee is *offering* food, yet the fact of the matter is that *the thus extended tongue is always seeking or asking.*

Most instructions for introducing queens cite the "offering of food" as one of the details to be observed. The many and constantly-recurring failures despite the presence of the supposed "peace indicating offering" strangely fail to raise suspicion as to the tenability of the theory.

CHANGING NECTAR INTO HONEY.

Another error most solemnly reasserted from time to time is that bees ripen the honey by creating a high temperature, establishing a rapid circulation of air and then pumping the nectar back and forth on the tongues, that it may be exposed as much as possible to this warm draft. It is a very pretty example of the cart before the horse, coupled with an ingenious but erroneous theory as to what converts nectar into honey.

The heat is caused by the action of the bees in treating the nectar, and the heat together with the moisture compels the bees to create the draft. The belief about bees pumping the nectar up and down the tongue seems too absurd to warrant consideration were it not so often stated as fact. Some writers have made the theory even more absurd by stating that the bees crook the tongue slightly, that the drop of nectar may not be knocked off by contiguous bees.

A knowledge of the structure of the bee's tongue, together with a little observation of the bees at the ripening

ork, will quickly convince any unbiased person of the inaccuracy of such statements.

A description of the actual operation is subjoined, and may be readily verified. It is part of the results of a long series of studies into the functions of various organs of the bees. The nectar-treating worker becomes quiet, generally on the comb containing nectar or honey, then the mandibles part, the mouth opens and becomes filled with a drop of fluid. This drop extends outward between the mandibles, filling the space and covering the openings of gland system No. 4, of Cheshire and Cowan. (For description of functions of these glands see Cowan's "Honey-Bee," pp. 120 and 121.) The drop of fluid remains in this position for a period of several minutes at a time, and while it is there the chin is slowly and steadily moving up and down—exactly as if the bee was chewing something in her mouth—and this causes the drop to pulsate slightly. During this time the tongue is folded up behind the chin and *takes no part in the process of converting the nectar into honey.* After a time the drop of fluid is swallowed and after a moment's pause another appears and the process continues.

Each "mouthful" is equal to more than half of the capacity of the honey-sac. The tongue of the bee could not begin to care for the quantity of fluid treated by her in her mouth, and, furthermore, if treated on the tongue it would be beyond the reach of the gland secretions. The primary cause of the conversion of nectar into honey is the action of the secretions of the glands; the evaporation of moisture is secondary.

Providence Co., R. I.

50 EGG INCUBATOR $5

Everything necessary to complete the process of incubation is included in above price and shipped with the machine—a complete incubator (except the oil). We guarantee the

CYCLE HATCHER

to hatch every strong fertile germ, when directions are followed, or we will refund the purchase price. We have worked for years to perfect this machine and so to simplify it that we could sell it for $5 with a guarantee so broad that no one need hesitate to buy one. We have reached our goal. Send for our free catalog of the **Cycle Hatcher** before you buy, or send $5 and we will ship machine subject to trial, money to be refunded if it don't substantiate every claim we make.

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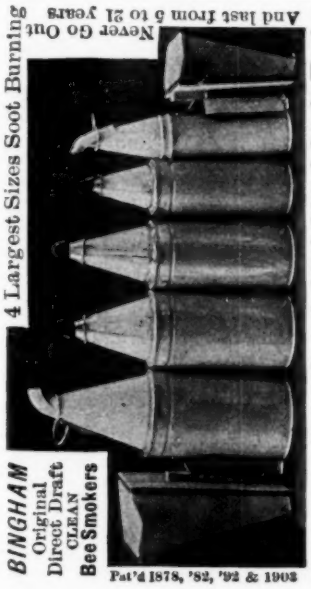

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T. F. BINGHAM, Farwell, Mich.

OTISVILLE, PA., Jan. 18, 1904.

Dear Sir:—I have tried almost everything in the smoker line; 3 in the last 3 years. In short if I want any more smokers your new style is good enough for me. I thank the editor of Review for what he said of it. Those remarks induced me to get mine. FRED FODNER.

Reports and Experiences

Getting Supers Ready in Winter.

Perhaps I should not contradict anything said by G. M. Doolittle, yet my experience has been directly the opposite of what he advocates on page 54, where he says:

"All the foundation used in both sections and frames in my apiary during the past 15 years, was placed where it is to be used by the bees during the months of December, January, February and March."

Last winter I fixed my supers in the way he mentions, and when I came to get them to place them on the hive, lo and behold! 3 starters out of every 4 were fallen to the bottom of the super, so that I had to go through every super and fasten them again. Owing to this experience I shall wait until warm weather to fasten starters.

CHARLES M. HARRIS.

Schoharie Co., N. Y., Jan. 30.

Selling Honey in the Home Market.

I notice that some of our bee-keepers seem to have little difficulty in selling their honey in their home or near-by markets. In 1903—that fine honey season—I secured from 15 colonies, spring count, about 4000 pounds of honey. Very few people came to the house, and I would have sold little in that way, but

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that high-grade, low priced, absolutely reliable, up-to-date hatcher. Sure profits. Begin now—get an early start. Write for free catalog today.

Gem Incubator Co., Box 52, Dayton, Ohio

Please mention Bee Journal when writing.

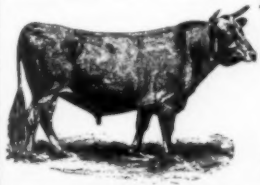
L. L. Olds Seed Co —Many of the thousands of farmers who visited the Louisiana Purchase Exposition will remember with pleasure the exhibit of the L. L. Olds Seed Company, of Clinton, Wis. Those who have received the Olds catalog for 1905 have again been pleasantly reminded of their visit to St. Louis by the half-tone view on its first page. They will also notice that the exhibit by this concern captured a gold medal. The gold medal standard of seeds and potatoes—potatoes are one of L. L. Olds Seed Co's specialties—is certainly the quality that the farmer and gardener should plant in order to secure the best results. A careful perusal of their catalog shows what the L. L. Olds Seed Co. is prepared to do for those who will place their orders with them. Any who are not already posted in this regard should obtain a copy before making out their orders for the coming season. Please mention the American Bee Journal when writing.

Why Berkshires

are claimed by some swine breeders to be superior to the Poland-Chinas will be fully discussed in the March issue of that authoritative stock paper

Blooded Stock

Foremost American writers on swine, headed by Mr. A. J. Lovejoy, will discuss, from all viewpoints, the modern methods of breeding, feeding, selling. Subscribe! You can pay 25c—that's all it costs for a year. April "Blooded Stock" will be devoted exclusively to Jersey Cattle. Send for free sample copy and handsome booklet, then you'll be convinced how much you need "Blooded Stock" to make money in your business.



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MUSICIANS get in touch with "EVERYTHING MUSICAL" by asking for our catalogues. We Import and Wholesale all sorts of instruments and publish all kinds of music, and our prices rule the retailer out. Buy everything you want from our catalogues. Every day's a bargain day at this big music bargain house. Write for catalogues. Ask for list of SECOND HAND instruments, repaired and made almost as good as new.
H. E. McMILLIN, 108 Superior St., Cleveland, O.

For Queens SEND TO JOHN W. PHARR Berclair, Tex.

He will furnish at same prices as last year: Tested, $1; Untested, 75c; 5 for $3.25; 10 for $6; 15 for $8.25; 25 for $12.50; 100 for $45. He breeds Goldens, Carniolans and 3-Band Italians. Also 1, 2, and 3 frame Nuclei, and full colonies. Prices given on application. Pharr pays the freight, and guarantees satisfaction on all Queens. To do justice and judgment is more acceptable with the Lord than sacrifice. —(Prov. 3: 21.) 6Atf

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Please mention Bee Journal when writing.

GRAND CONTEST! BIG PRIZES FREE!

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If this chart gets destroyed another printed upon heavy paper will be sent you upon receipt of 2c stamp for postage

FREE If You Can Tell How Many Dots in Ohio?

IF YOU CAN COUNT AND PLAN YOU CAN WIN!

Those who can count the dots in Ohio correctly or nearest correctly will be given the following list of prizes:

Two Elegant Pianos, one to a lady and one to a gentleman.
2nd. An Elegant Cabinet grand six octave **Organ.**
3rd. $150 cash, **4th. $100** cash, **5th. $50** cash.
6th. Weber Gasoline Engine.
7th. DeLaval Cream Separator.
8th. Elegant Elkhart Top Buggy.
9th and 10th. Each a first-class 100 or 150 Egg Incubator.
11th. Empire 6-hole Steel Range.
12th. F. W. Mann Bone Cutter.
Next 20, $5.00 each. Next 25, $2.00 each.

CONDITIONS: We have made arrangements with Successful Farming of Des Moines Iowa, to send both FARMERS' TRIBUNE and Successful Farming one year for $1.00 which gives you one free count, or both papers two years for $2.00 and give you three counts. You should have three counts as it means $50 if you win. See below.

Don't Delay! If you want a Piano or other Prizes free, send your counts at once. **Win! Win! Win!**

Do not fail to get counts in at once. Our complete list of prizes contains six pianos, five Ertel, five Old Trusty and five Sure Hatch Incubators, five Galloway harrow carts, five Empire Steel six hole ranges, Hoover-Prout Potato Digger, Smith Manure Spreader, Star Mfg Co. Feed Mill, Parlin Orendorff Corn Planters; Osgood Scales, a $175 DeLoach Sawmill outfit, Deere & Co Cultivator; an Electric Handy Wagon; Campbell Fanning Mill, Tower Cultivator, Kaestner Feed Grinder, Milne Stump Puller, Stearnes' Bone Cutter, Carriages, Hapgood Plow, five C. A. S. Farm Forges, Wilson Bone Cutter; Eckhart Driving Harness, etc.

Send in counts and subscription as above and get our complete premium offer. Never did you have such an opportunity before. Don't delay, you want some of these premiums. Now is your chance

TEST OF SKILL—This contest is not to be confused with the guessing or estimating contests which are not permitted by the Post Office Department. Our contest is a test of skill in counting and getting up best plans and the best man wins. It depends upon you. There is no guess or chance about it. Do not hesitate about entering but get your counts in at once.

CONDITIONS:—$1.00 pays for one full year's subscription to both the FARMERS' TRIBUNE and Successful Farming, and entitles you to one count. $2.00 pays for two years and entitles you to three counts and makes you eligible for the $50.00 prize.

$50 PRIZES—We believe everybody should have three counts so they can have one each side of what they think is correct to be more sure to hit it. To encourage this we will give $50.00 extra to winners of 1st prizes if they have three counts. Remember if you have one count you get 1st prize only but if you have three counts you get $50 extra.

AWARDS will be made as follows—The person giving correct or nearest correct count will get first prize. Next nearest correct, second prize, etc. In case of a tie for any prize it will be awarded to the person giving best plan for counting the dots. State whether you enter ladies' or gents' contest, as one piano goes to lady sending best count or plan the other to gentleman sending best count or plan.

DON'T FAIL to enclose remittance with your letter giving counts, as we cannot enter you as a contestant until it is received.

JUDGES—The awarding of prizes will be wholly in the hands of disinterested judges. We have chosen bankers, ministers, public officials, etc., to act as judges in our contests. Ex-Governors, Mayors, Treasurers, etc., have acted as judges. We are bound our contests must be absolutely fair.

OUR FINANCIAL RESPONSIBILITY—As to whether we are abundantly able to do as we say, we are glad to refer to Sioux City Stock Yards Co. or First National Bank of Sioux City.

In the event more than one person should submit the same plan and this was considered the best plan by the judges, each person so tieing will be asked to tell in 50 words how best to improve Successful Farming. The one making best suggestions gets first prize, next best next, etc. Understand this is only in case of tie in plan, which is not at all likely.

Publishers FARMERS' TRIBUNE, Sioux City, Iowa.

I enclose $..... for .....year's subscription to both FARMERS' TRIBUNE and Successful Farming and I wish to enter the ..... (write ladies' or gents') Contest. If $2.00 is paid send three counts; if more than $2.00 send one count for each $1.00 over $2.00. If only one year is paid send only ONE COUNT. The extra $50 go only to those having THREE or more counts entered.

My Count is. (1).....(2).....

(3).....

Name ..... P. O. ..... State .....

Remarks: My plan of counting is .....

Dept C

PRIZE WINNERS IN PAST CONTESTS

A Piano for $1.00. Surely people may enter your contests knowing that they will receive fair treatment. How glad I was to win a piano for so small an amount and wholly unexpected. The paper alone is worth all I paid. MRS. L. W. NOTT, Marion, Ia.

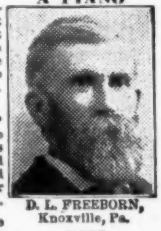
A PIANO

MRS. L. W. NOTT, Marion, Iowa.

A Piano for Illinois. An Elegant Piano for a Dollar! That is what I got and anybody that thinks your prizes are not awarded fairly don't know. There can be no favorites or I would not have won. MIRA E. PURSMAY, Panola, Ill.

A Piano for Pennsylvania. Easiest way I ever saw to get a piano and you people are surely fair. Friends laughed at me and said friends received the prizes. Now they are sorry they did not enter. Will never be without your paper. D. L. FREEBORN, Knoxville, Pa.

A PIANO



D. L. FREEBORN, Knoxville, Pa.

He Won a Piano. Refer people to me if they want to know whether you are honest. I got a piano for a prize and never heard of you until I answered your ad. Your paper is worth twice the subscription price. W. C. ELLIOTT, Audubon, Ia.

A PIANO

W. C. ELLIOTT, Audubon, Ia.

$100.00 Prize. I got my $100 and it was the easiest I ever earned. The dots are hard to count but I know the prizes go to those who win them fairly. AMY R. BARNES, Van Horne, Ia.

$100.00 CASH

AMY R. BARNES, Van Horne, Ia.

Won $350 Cash. To Whom It May Concern: I won grand prize of $350.00 Cash in last contest. I was much surprised. I want to vouch as to Successful Farming's fairness to any and everybody. JOHN A. GOODWIN, Akron, Ohio.

$50.00 CASH

EUGENIE FOURNIER, Matane, Quebec.

$50.00 for Canada. Way up here in Canada I won $50. Never knew there was such a paper until I answered ad, Now I will never be without it again. MISS E. FOURNIER, Matane, Quebec.

$50.00 NEWTON RARICK, Ligonier, Indiana.

$50.00 CASH

NEWTON RARICK, Ligonier, Ind.

Others Who Won: $100—Eva I. Buckner Fredonia, Kan. $25.00—Clara Albers, 1209, Wal., Cincinnati, O. $100.00—C. S. Wyman, Vinton, Ia. $50.00—S. Irving Stoyer, 225 E. Balt., Baltimore, Md. $100.00—E. M. Hall, Montrose, Mo. $25.00

Nobody connected with our paper will be allowed to compete. Contest closes April 30, but get your counts in at once. See about time prize above. Anybody having three counts entered may enter additional counts at 25 cents each. Be careful to give your plan of counting, as the best plan used will decide all ties.

Address all letters to FARMERS' TRIBUNE, SIOUX CITY, IOWA.

my children established certain routes where they peddled the honey, and in a little while it took them about a week to supply their customers who bought readily and regularly. In this way I might have sold much more.

The same year I offered to sell a merchant some at 2 pounds for 25 cents, and he replied that he could sell me some at 7 cents a pound. I asked him how he could do that, and he said, "Oh, don't believe that it is real honey; it's glucose". I really believe that merchants believe in honey very little.

Can any experienced bee-keeper tell me whether or not it would be wise for a man getting an average of $15 a week to discontinue his work and go to bee-keeping in the the vicinity of Chicago? G. H. KIENZLE.

Kane Co., Ill., Feb. 13.

Bees Stored Little Surplus Honey.

My 67 colonies of bees did not do very well last season. They gave only 700 pounds of surplus honey against 3500 the year before. Moving from Alabama to Mississippi I think is the cause, together with the season not being favorable.

The worst of the winter weather is now upon us. Last year at this time the bees were gathering pollen freely from elms, alders and maples.

I enjoy reading the reports of the subscribers, and hope each will report his ups and downs. R. V. GOSS.

Monroe Co., Miss., Feb. 8.

Bees Did Very Well.

My bees did well last year. I wintered them on the summer stands, losing one colony. I increased from 10 last spring to 20, and secured 1284 pounds of surplus honey,

I Will Teach You the

Chicken Business

WITHOUT CHARGE

and guarantee you success if you use

MODEL

Incubators and Brooders

Send for Descriptive Catalogue.

CHAS. A. CYPHERS

3926 Henry St. BUFFALO, N.Y.

Please mention Bee Journal when writing.

The Fruit of the Vine.—Autumn seems a long way off when snows of winter have scarcely gone. But the agriculturist must be a man who looks far ahead and lays his plans for the future. Summer will be well on the wane before the purple clusters of grapes hang in juicy lusciousness on the vines. It is then that most people will be thinking about grapes. But the grape-grower has to be thinking about what the harvest will be long, long before—several years before, in fact, for it takes time to develop a good vineyard. Mr. Louis Roesch, of Fredonia, N. Y., makes a specialty of fine grapevines—he has over 800,000 of them for sale, including some 69 different varieties besides trees and small fruits. Any one intending to set out vines or small fruits may obtain a descriptive price-list free by addressing Mr. Roesch, who is a specialist in this line. Send for his catalog, and mention the American Bee Journal when writing.

THIS LIGHTNING **Lice Killing Machine**

kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes. Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder*, etc. We secure special low express rates. Catalog sent free. Write for it.

CHARLES SCHILD CO.
401 Detroit St., Cleveland, Ohio

Please mention Bee Journal when writing.

BEE-SUPPLIES

Lewis' Goods at Factory Prices

Best shipping-point in United States.

Special inducements on Bee-Hives. 88-page Catalog—good information for all bee-keepers—**free.**

ASK ABOUT OUR FREE POCKET-MIRRORS.

C. M. SCOTT & CO., 1001 E. Wash St. **Indianapolis, Ind.**

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Important to You

And Complimentary to Us

Is the fact that, after 20 years in the **SUPPLY BUSINESS**, the last year shows an increase of 33 percent over any previous year.
Is there any better proof than this, that we satisfy and please our customers?
We have the facilities, the experience, and just the kind of goods you want.
They are the **ROOT GOODS**, and we sell them at Des Moines at **Factory Prices.**
Write for estimate and discounts. We can save you money. Send to-day for 1905 catalog.

JOSEPH NYSEWANDER Iowa Phone 968 565 & 567 W. 7th St. **Des Moines, Iowa**

8 s 5t—14 E 5t

Send for Our 1904 Catalog and Price-List.

OUR **HIVES AND SECTIONS**

Are Perfect in Workmanship and Material.

By sending in your order NOW, you will SAVE MONEY, and secure prompt shipment.

We will allow y a cash discount of 3 percent on orders sent in during January.

PAGE & LYON MFG. CO., New London, Wis. U.S.A

"If Goods are wanted Quick, send to Pouder"

BEE-SUPPLIES

Root's Goods at Root's Prices

Everything used by Bee-Keepers.
POUDER'S HONEY-JARS. Prompt Service.
Low Freight Rates. **Catalog Free.**

One of those nice **FLEXIBLE BEE-HATS** included **free** with every shipment, if you will mention it when ordering, telling where you saw the offer.

WALTER S. POUDER,

513-515 Massachusetts Ave., INDIANAPOLIS, IND.

Please Mention the American Bee Journal when writing Advertisers

which was very good for a season following so cold a winter as last winter, leaving them weak in the spring.

Bees appear to be in good condition so far this winter.

I wish great success to the American Bee Journal, as it will bring success to those who study its pages. WM. Z. RUGGLES.

St. Joseph Co., Mich., Feb. 7.

Bees Seem to Be Wintering Well.

We look for a good honey crop the coming season, as we have had lots of snow and the clover has been protected all winter. I have 70 colonies of bees in the cellar, and they seem to be doing well. We usually put our bees out about March 20, if the weather is nice.

I think a good deal of the "old reliable" American Bee Journal, and have it filed away for 5 years. C. M. LAWRENCE.

Blackhawk Co., Iowa, Feb. 28.

Other Side of Bee-Keeping—Non-Swarming Bees.

I have read many letters in the American Bee Journal from beginners, telling of great success with bees, so much so that I am afraid some of the uninitiated might get it into their heads that all they have to do is to get a few colonies of bees and grow rich, and

STANDARD

Poultry AND.... **Bee SUPPLIES**

The best of everything for the poultry and bee-keeper.

Freight Rates from TOLEDO are the Lowest

BIG DISCOUNTS FOR EARLY ORDERS.

Our 60-page Illustrated Catalog is out. Send for one. IT'S FREE.

GRIGGS BROS.

521 Monroe Street,

TOLEDO, - OHIO.

A Flourishing Enterprise.—A business career of 19 successful years is something any firm may look back upon with pardonable pride. And when to the achievements of the past is added the more progressive methods of the present, the outlook for the future assumes a most promising prospect. The proprietor of "The German Nurseries", Mr. Carl Sonderegger, of Beatrice, Nebr., may reasonably expect a continuation and steady growth of the patronage which has enabled him to not only carry on a successful business, but so to increase his facilities as to be able to handle a much larger trade than heretofore. Mr. Sonderegger believes that "value received" merits fair compensation, and that it is better to build the reputation of his nurseries on the integrity of his stock rather than the amount offered at a certain price. Consequently, his 1905 catalog contains no offers of cheap seeds to equalize the quality and price. His guarantee goes with his stock, and every precaution is taken to insure arrival at destination in perfect condition. Send for his catalog, and please mention the American Bee Journal when writing.

SALZER'S SEEDS Never Fail

600,000 planters scattered the world over are willing to say under oath that **Salzer's Earliest Vegetables** are from six to twenty days earlier than the earliest of their kind produced from other seedsmen's seeds. **Why?** Because for more than one-third of a century Salzer's Seeds have been bred up to earliness.

For 35c

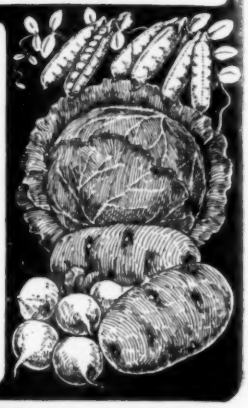
1 big pkg.	Salzer's Scorcher Pea	10c
1 " "	Early Bird Radish	10c
1 " "	Salzer's Earliest Lettuce	10c
1 " "	Earliest Cucumber	10c
1 " "	Earliest Beans	10c
1 " "	4th of July Sweet Corn (Six days earlier than Peep O'Day)	10c
1 " "	Six Weeks Verbena	15c
	Total	75c

Above seven packages of earliest vegetable and flower novelties positively have no equal on earth for earliness. If you wish the earliest, finest vegetables for your home garden or for the market, Salzer's seeds will produce them every time. We mail you above seven big packages, together with our great plant and seed catalogue for **85c Stamps.**

FOR 16c. POSTPAID

We mail to you our big catalogue with sufficient seed of cabbage, celery, lettuce, onions, radishes and turnips to grow 9000 luscious vegetables and a package containing 1000 kernels of beautiful flower seeds besides!

JOHN A. SALZER SEED CO., La Crosse, Wis.



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Dittmer's Foundation is the Best.

Send for Catalog, Samples and Discounts, and judge for yourself. 1904 output, 50 percent increase over 1903.

Full line of SUPPLIES, wholesale and retail.

Working Wax into Foundation for Cash a Specialty.
E. GRAINGER & Co., Toronto, Ont., Sole Agents in Canada for Dittmer's Foundation.

GUS DITTMER, Augusta, Wis.

GOOD DISCOUNTS ON EARLY ORDERS

COMPLETE STOCK OF BEE SUPPLIES--LEWIS CO.'S AT FACTORY PRICES

MUTH SPECIAL HIVE THE BEST DOVE TAIL MADE

SEND FOR CATALOG.

WE ARE ALWAYS IN THE MARKET TO BUY HONEY--SUBMIT PRICE.

THE FRED W. MUTH CO.

51 WALNUT STREET. CINCINNATI, OHIO.

Wisconsin Basswood Sections

And Prompt Shipments

Is what we are making for our customers.

— DOVETAILED HIVES AND SHIPPING-CASES —

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87½ Percent Saved

In mortality to those insured in the

TOTAL ABSTINENCE DEPARTMENT

—OF—

Security Mutual Life Insurance Company

EACH POLICY HOLDER is entitled to a Bond issued by the National Total Abstinence League.

YOU may hold a policy and BOND.

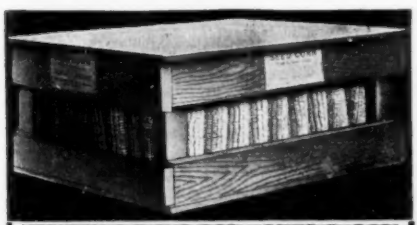
General and special agents wanted. Address,

3D28t **A. S. RENNIE, Mgr., 614 Marquette Bldg., Chicago, Ill.**

...at,' too, without much labor. I have had men tell me (of course men who knew nothing about the business) that there was more money in bees than in anything else. One object in writing this letter is to show that there are two sides to bee-keeping as well as all other things, and another is to answer Dr. Miller's question on page 8, as to how I kept my bees from swarming.

In the spring of 1902 I purchased 2 colonies from a neighbor, and he gave me another which he had in a nail-keg. He said he had never gotten any honey from the nail keg, but had lots of swarms. I bought 5 dovetailed hives, set them up, put in foundation and made ready for the first swarms that might issue. At this time I was living in Eagle Co., Colo., and as I was away from home a great deal, and fearing the bees would swarm in my absence, I divided the strongest colony and bought a queen for the queenless portion. The nail-keg colony became so strong that a great many bees had to sleep outdoors at night, and in the daytime they hung out in a great cluster. But *nary a swarm* did they cast.

On Aug. 18 I removed to California, afterwards selling my bees and hives. In April, 1903, in partnership with another man, I purchased 59 colonies. These bees had to be moved 12 miles, and though handled by an old bee keeper (I being absent at the time), they were loaded into lumber wagons without any cushions, and without any ventilation except a wire-screen over the ⅜x12 entrance, and trotted over rough roads, and the result



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The corn that has made Shenandoah famous. Has outyielded all other varieties of yellow corn wherever tested. A deep grained 100 day yellow corn, ripe in September. Will outyield, outshell, and outsell any yellow corn you ever grew. The world's husking record, 201 bu. in ten hours, was made in this corn near Shenandoah, Dec. 8, 1903. Send for free catalog, photographs and samples of this and other varieties of corn. $5.00 worth of seeds free on club orders. Ask about it.

HENRY FIELD, SEEDSMAN, BOX 50 , SHENANDOAH, IOWA

THE EAR SEED CORN MAN

Please mention Bee Journal when writing

March 1st to April 15th

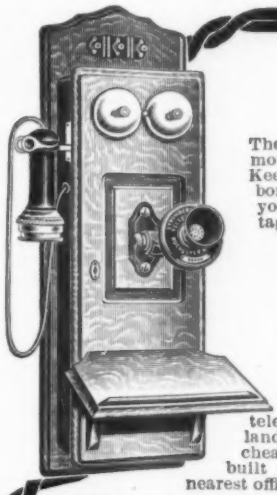
2 percent Discount.

Dovetailed Hives from Michigan White Pine, $1.25 each, 1½-story for comb honey. Address,

The Wood Bee-Hive and Box Co.

10Atf LANSING, MICH.

It's a Pleasure to Plant.—There's a genuine fascination about planting and digging around the garden, in plowing and planting a field; besides, it's a healthy, profitable out-of-doors pastime to raise a garden. You can get nearer to Nature in the garden and the field than anywhere else on earth. To plow and plant—to see the tender sprouts shoot above the soil, and to watch them grow and develop—what grander way to study Nature than this occupation affords? What is more beautiful than the neat, clean rows of growing garden-truck or the waving grain of the field? What more pleasant than the table loaded down with the green things you raised yourself? What more disappointing than the garden that refuses to grow? To be certain that your garden shall be a success, and the yield of your field profitable, you must look well to your soil and your seed. W. W. Barnard & Co., 161 & 163 E. Kinzie St., Chicago, Ill., will be pleased to help you; they will send *free* their 1905 *Annual Seed Catalog*, which will put you right as to the best seed for you to plant to insure success in your garden and on your farm. Write for the book to-day, and please mention the American Bee Journal.



A Telephone for the Country Home

The telephone in the country home is not a luxury—it's a money-saving investment that brings returns every day. Keeps the farmer's family in close relation with the neighbors, saves many a trip to town, and helps to make the young folks satisfied with the farm by giving them advantages like their city cousins.

Stromberg-Carlson Telephones

Are the right telephones for country homes. They work right, *stay right*, and the price is right. Our Book F-80 "*Telephone Facts for Farmers*"—gives complete information on how to organize, build, equip and maintain a telephone line. Farmers are building lines all over the land. *Why not you?* Write for the book and see how cheaply it can be done. Our book 80 tells how others have built rural telephone systems. Both books are *free*. Address nearest office *today*.

STROMBERG-CARLSON TEL. MFG. CO., Rochester, N. Y., Chicago, Ill.

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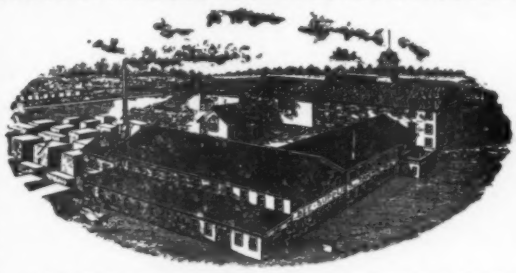

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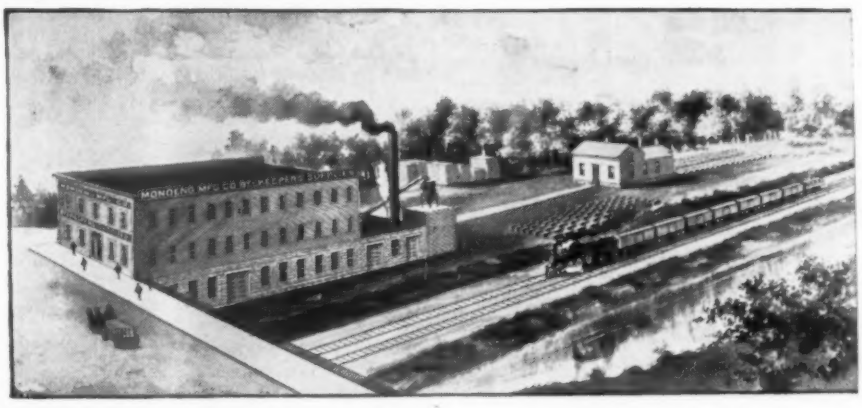
We carry a large stock and greatest variety of everything needed in the Apiary, assuring BEST goods at the LOWEST prices, and prompt shipments. We want every bee-keeper to have our FREE ILLUSTRATED CATALOG, and read description of Alternating Hives, Massie Hives, etc. WRITE AT ONCE FOR CATALOG

AGENCIES.—Trester Supply Co., Lincoln, Neb.; Shugart & Ouren, Council Bluffs, Iowa; Fulton & Ford, Garden City, Kan.; I. H. Myers, Lamar, Colo.; Southwestern Bee Co., 438 W. Houston St., San Antonio, Tex. **KRETCHMER MFG. CO., Red Oak, Iowa.**

Please mention Bee Journal when writing.



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MONDENG MFG. CO.,

147 and 149 Cedar Lake Road, MINNEAPOLIS, MINN.

7Dtf Please mention Bee Journal when writing.

was something awful. Five of the strongest were killed outright, and about half of the others were damaged so badly it took them all summer to build up into fair-sized colonies.

The honey crop in this part of the country that year was a light one, but we got about 1200 pounds of extracted, and not a single swarm. I forgot to say that I had in the meantime purchased "A B C of Bee Culture" and subscribed for the American Bee Journal, and I expect to get more bee-literature later on. During this season the bees were run by the old bee-keeper who moved them, while I worked at my trade.

In the fall I purchased my partner's interest, and also bought 13 more colonies from another man, and in the spring of 1904 moved them to a location 6 miles away. This time I had charge of the moving myself, and did not break a single comb.

The honey crop for 1904 was a complete failure. I got only about 75 pounds of comb and 75 pounds of extracted, and in the fall I had to feed about $15 worth of sugar, but, as usual, I did not have any swarms. I have done nothing to keep them from swarming unless I did it without knowing it, for I *wanted* them to swarm, so the only way I can answer Dr. Miller is in his own language, "I don't know".

I did not go into the bee-business expecting to make "easy money", but I made up my mind some years ago I would like to follow it, and though it has been a failure financially so far, I am more enthusiastic over the business now than ever. The nearest I can size things up in this part of the country, after a two years' residence here, is as follows: We can depend upon a heavy honey-flow once in 5 years and one failure in that time, and the other 3 years will be ordinary or light crops, and if a man gets an average of 75 pounds per colony per year he is doing well.

I am gradually learning the business as I go along, and if I should get "fired", or get too old to run a locomotive, I hope to be able to make a living keeping bees.

I think the prospects for this year are good. We have had about 10 inches of rain, and it is raining to-day. I expect to try my hand at brood-rearing this year, and make some artificial increase, as I seem to have a strain of non-swarming bees, and I must do something to make up for winter losses.

This is my first letter, and it is rather lengthy, but a man is usually forgiven for the first offense, so I hope to be in this case.

J. W. KALFUS.

San Luis Obispo Co., Calif., Feb. 1.

Strongest in Vitality

Handsomest in Appearance. Most Desirable in Shape and Size. Best all the Year Round Potato

Other 1905 leaders are Vt. Gold Coin, Ey. Roser, Vornehm, Norotton Beauty, Red River Ohio and Acme, Pat's Choice, Sir Wal. Ral., etc. We are headquarters for seeds. Largest stock, lowest prices. Our Potatoes and Seeds awarded Gold Medal at St. Louis. 80-page Catalog free.

L. L. Olds Seed Co., Drawer G, Clinton, Wis.

Sweet Clover Seed

FOR SALE

50 lbs. or over, at 5 cents per pound. Address,
5A9t JOSEPH SHAW, Strong City, Kans.

The ORMAS Incubators & Brooders

Low in price. Fully guaranteed. Send for free catalogue.

ORMAS MFG. CO., LIGONIER, INDIANA.

Wanted Man 20 to 30 years old capable of taking charge of an apiary of 200 colonies. Can give employment balance of year collecting and soliciting for lumber and coal. In answering give reference and salary expected. TRESTER SUPPLY CO. LINCOLN NEB
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AGENTS WANTED

STEADY EMPLOYMENT, GOOD PAY, ELEGANT OUTFIT FURNISHED. WRITE FOR TERMS. BEAUTIFUL COPYRIGHTED CATALOGUE
700 ACRES
THE GREENING BROS. NURSERY Co.
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Fruitful Trees High in Quality Low in Price

Millions of Fruit and Forest Trees, Apples, Peaches, Cherries, Grapes and Strawberries, R. Mulberry and Black Locust Seedlings at special prices. Freight prepaid on $10 orders. Guaranteed to reach you fresh and bright. Don't miss our free catalogue.

GAGE COUNTY NURSERIES
Box 646 Beatrice, Neb.

$12.80 For 200 Egg INCUBATOR

Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day

GEO. H. STAHL, Quincy, Ill.

450,000 TREES

200 varieties. Also Grapes, Small Fruits etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Desc. price list free. Lewis Roesch, Fredonia, N. Y.

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1—11A5t

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Made of artificial stone. Practically indestructible, and giving entirely satisfactory results. Comb foundation made easily and quickly at less than half the cost of buying from the dealers. Price of Press, $1.50—cash with order. Address,

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The Dixie Home MAGAZINE, largest, brightest and finest ILLUSTRATED MAGAZINE in the world for 10c a year, to introduce it ONLY.

It is bright and up-to-date. Tells all about Southern Home Life. It is full of fine engravings of grand scenery, buildings and famous people. Send at once. 10c a year, postpaid, anywhere in the U.S., Canada and Mexico. Six years, 50c. Or, clubs of 6 names, 50c; 12 for $1. Send us a club. Money back if not delighted. Stamps taken. Cut this out. Send to-day. THE DIXIE HOME,
24A48t No. 75. Birmingham, Alabama.

The Incubator an Educator.

Looking at the history of artificial incubation in America from a critical standpoint the name "Prairie State Incubator" stands identified intimately with its successive stages of progress.

Any man, woman or child can apply the plain directions in the Prairie State book of directions and with a Prairie State Incubator and Brooder any farmer, villager, suburbanite or commercial poultryman can make money every day.

The Prairie State has been a winner "from the start." From 1886, when Mr. Mix first put his incubator on the market and won the first prize at the great St. Louis show, to the present date, the Prairie State has been forging ahead—a steady winner. Three hundred and twen-

ty-six of these prizes are recorded in the new catalogue with dates. The majority of these were not won by trained operators trained for the purpose, but by local poultry-raisers. Some were farmers' wives—genuine poultry enthusiasts; some were storekeepers—some farmers. These enthusiastic people take their own machines in their own wagons. The Prairie State had fulfilled all their anticipations. It had not disappointed them. Consequently they were proud of their ability to select a machine that hatched 85, 90 and 95 per cent of the fertile eggs. Naturally they wanted to exhibit the machine.

The Prairie State Catalogue is a library of information on every point for the education of beginners or experts in poultry raising. Any one can get one free from the Prairie State Incubator Company, Homer City, Pa.

Poultry Catalog Free.

33 varieties; Best, cheapest in the West; Illustrated, How to Raise Poultry; Make hens lay. Box 451-I. S. MINSHALL,
10Atf DELAVAN, WIS.

Bee-Supply Quality.

When you send your orders to us for BEE-SUPPLIES of any kind you can rest assured that you are going to get the very best it is possible to make.

We have all the modern facilities and are right in the heart of the lumber district. We have no freight to pay on our raw material, therefore we save you 25 percent.

JOHN DOLL & SON,
Power Building, MINNEAPOLIS, MINN.

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Guaranteed Superiority!

Lowest Prices

We have been making **Bee-Hives, Sections,** etc., for over 20 years.

NEW .. ILLUSTRATED .. CATALOG **free;** also sample copy of

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The **best** magazine for beginners. (It has been published by us regularly for 15 years.)

Address,

THE W. T. FALCONER MFG. CO.,

JAMESTOWN, N. Y.

CONVENTION NOTICES.

Illinois.—The Western Illinois Bee-Keepers' Association will hold its spring meeting April 5, in the County Court Room, in Galesburg. Seasonable subjects will be discussed. Each meeting so far has been more interesting than the previous one, and we hope to continue that way. We earnestly invite all who are interested in this industry who are within easy reach of Galesburg, to be at this meeting.

E. D. WOODS, Sec.

Michigan. — The Northern Michigan Bee-Keepers' Association will meet in Lady Maccabees Hall, at Central Lake, Wednesday and Thursday, April 5 and 6, 1905. Hotel rates will be, The Tavern, $1.50 per day. Editors A. I. Root and W. Z. Hutchinson will be present; also E. D. Townsend, Geo. E. Hilton and a number of other practical apiarists of Northern Michigan If you have never attended a convention let us suggest that you try it for once, and you will have a higher opinion of your calling when you leave. W. MOHRMANN, Sec.
GEO. H. KIRKPATRICK, Pres.

Utah.—The Utah Bee-Keepers' Association will hold its spring convention in the Mayor's Office, City and County Building, April 7, at 10 a.m. All are invited. Matters of great interest to bee-keepers, and horticulturists will be considered. Cache Valley's experience of killing the bees by poison spraying in the bloom must not be repeated. Jot down your thoughts on this or any other question, and bring or mail the same. G. E. GARRETT, Sec.
E. S. LOVESY, Pres.

HONEY AND BEESWAX

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R. A. BURNETT & CO.,

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Let us quote you prices on Sections, Hives, Foundation, etc., as we can save you time and freight. **Beeswax Wanted for Cash.**

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That covers the whole Apicultural Field more completely than any other published, send $1.20 to

Prof. A. J. Cook, Claremont, Cal.,

FOR HIS

"Bee-Keeper's Guide."

Liberal Discounts to the Trade.

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At Root's Factory Prices

COMPLETE STOCK FOR 1905 NOW ON HAND.
FREIGHT RATES FROM CINCINNATI ARE THE LOWEST,

ESPECIALLY FOR THE SOUTH, AS ALL FREIGHT NOW GOES THROUGH CINCINNATI.

Prompt Service is what I practice.
Satisfaction guaranteed.
You will save money buying from me. Catalog mailed Free. Send for same.
Discounts allowed on early orders. Take advantage by ordering now.

Book orders for GOLDEN ITALIANS, RED CLOVERS and CARNIOLAN QUEENS.

☞ For prices refer to my Catalog.

C. H. W. WEBER CINCINNATI ...OHIO...

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, March 8.—There has been somewhat of an increase in the number of sales during the past 4 weeks, yet the volume has not been large, while prices are if anything lower than in January, especially on other grades than white clover. Fancy grades of white comb bring 12½@13c; No.1, 12c, with some off in color at 11@11½ cents; amber grades slow at 8@10c. Extracted, white, 6@7c; amber, 5½@6½c; the price being governed by quality, flavor and package. Beeswax, if clean and good color, 30c per pound. R. A. BURNETT & CO.

NEW YORK, March 11.—There is no improvement in the comb honey situation. The demand is next to nothing; quotations nominal and no doubt some of the stock will have to be carried over. We quote fancy at 13c; No. 1 at from 11@12c, and dark at from 9@10c. Extracted is in fair demand: White at from 6@6½c; light amber at 5½c; Southern in barrels from 50@57c per gallon, according to quality. Beeswax firm at 29c. HILDRETH & SEGELKEN.

BOSTON, March 9.—The demand for comb honey still continues light with heavy stocks on hand. Fancy white, 15@16c; No. 1, 14c. Extracted, 6@8c, according to quality.
BLAKE, SCOTT & LEE.

KANSAS CITY, Feb. 25.—The honey market is still very lax, with scarcely any movement at all; the best white comb stock, 24 section cases, is selling here at $2.25 per case. Extracted moving all the way from 4½@6½c per pound, according to quality. We look for an improvement. Beeswax in good demand at 28c.
C. C. CLEMONS & CO.

CINCINNATI, O., March 8.—The comb honey market has been a drag the last month; this caused the holders to offer extra inducements in prices. Quotations obtained are as follows: No. 1 fancy water-white comb, 12@13c; No. 2, 10½@11½c. Extracted: white clover in barrels, 6½c; in cans, 7½@8 cents; amber, in barrels, 5¼@5½c; in cans, 6@6½c. Beeswax, 27c.
C. H. W. WEBER

PHILADELPHIA, Feb. 20.—On account of the very bad weather the sales among the retail trade in honey have been slow. Quite a good many shipments have been arriving from distant points and the market at the present time is overstocked. We quote: Fancy white comb, 15@16c; No. 1, 13@14c; amber, 12c. Extracted, white, 6½@7c; amber, 6c. Beeswax, 27c.
We are producers of honey and do not handle on commission. WM. A. SELSER.

ALBANY, N.Y., Feb. 8.—Honey market dull this extreme cold weather, especially comb, which candies or granulates and cracks easily. We quote: Fancy white, 13@14c; No. 1, 12@13c; mixed, 10@11c; buckwheat, 10@11c. Extracted, better demand: Buckwheat, 6@6½c; white, 6@6½c. Buckwheat most in demand, as the Jewish people will have no other. Beeswax, 30@32c. H. R. WRIGHT.

SAN FRANCISCO, Feb. 28.—White comb, 1-lb. sections, 11@12 cents; amber, 8@10c. Extracted, white, 6@6½ cents; light amber, 4½@5½c; amber, 3½@4½c; dark amber, 3@3½c. Beeswax, good to choice, light, 29@30c; dark, 27@28c.
A shipment of 200 cases extracted went forward per steamer for Germany the past week. Several small lots were taken for the Orient. Business on local account is light. Prices are without quotable change, but market is easy in tone.

CINCINNATI, March 10—There is little, if any, improvement in the honey market here, since our last quotation. We hope to render a more encouraging report soon. We quote amber extracted honey in barrels and cans at 5½@6½c. White clover at 7@8c. Fancy white comb at 12@13c. Beeswax, 28c.
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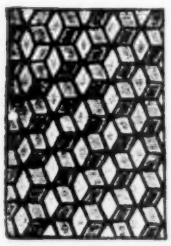

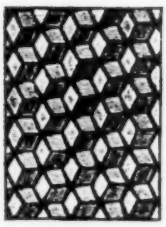

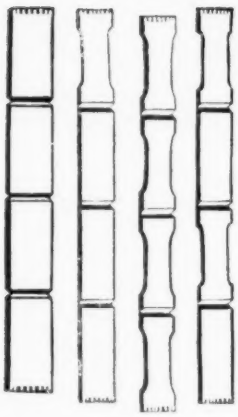

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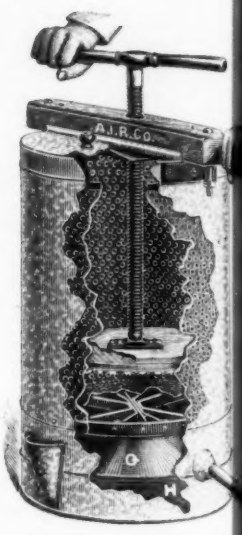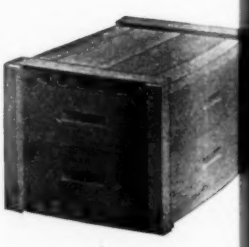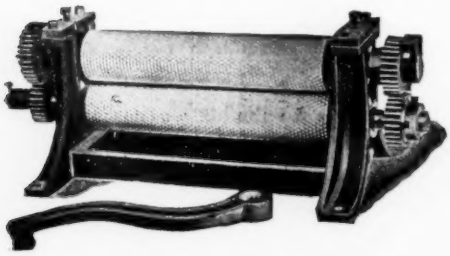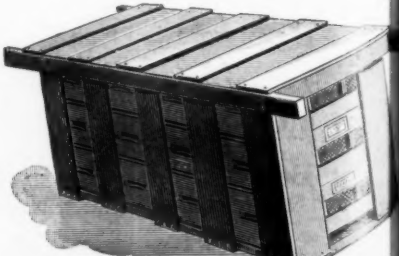
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